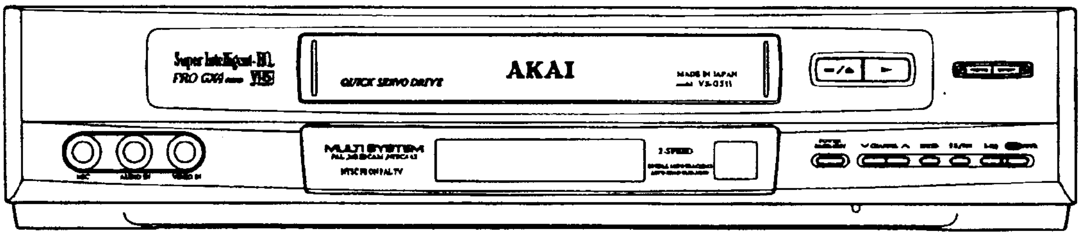
AKAI SERVICE MANUAL


AKAI
QUICK SERVO DRIVE
MULTI SYSTEM

HQ HIGH QUALITY VHS PAL SHOWVIEW

MODEL VS-G511EDG

G-CODE VIDEOPlus+

VIDEO CASSETTE RECORDER

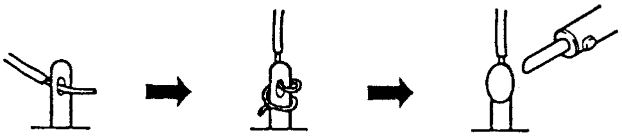
MODEL VS-G405 EA/EDG

MODEL VS-G511 EDG

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts.
   Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

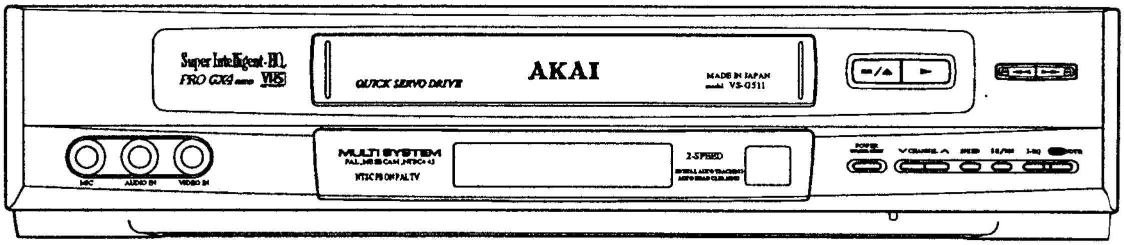
SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions.
The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M Ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot.

AKAI SERVICE MANUAL


AKAI
QUICK SERVO DRIVE
MADE IN JAPAN
MULTI SYSTEM
2-SPEED

MODEL VS-G511EDG

HQ HIGH QUALITY VHS PAL

SHOWVIEW

G-CODE

VIDEOPlus+

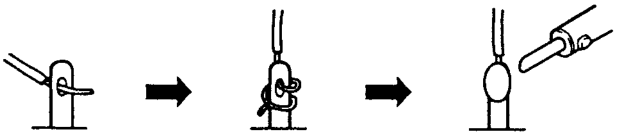
VIDEO CASSETTE RECORDER

MODEL VS-G405 EA/EDG
MODEL VS-G411 EM/EOH/ES
MODEL VS-G415 EA/EK/EO/EOH
MODEL VS-G417 EOG
MODEL VS-G418 EOG-V
MODEL VS-G511 EDG

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (✻) symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts.
   Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions.
The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M Ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot.

★ SPECIFICATIONS

Format	
EA/EK/ES	VHS standard
EDG/EM/EO/ EOG/EOG-V/EOH	VHS standard (PAL, MESECAM)
Video recording system	Rotary, slant azimuth two-head helical scan system
Rotary heads	4 video heads
RF input	
EA	System B, G VHF ch 0 - 5, 5A, 6 - 11, UHF ch 21 - 69
EDG	System D, K VHF ch 1 - 12, UHF ch 21 - 69 System B, G VHF ch 2 - 12, UHF ch 21 - 69 Cable ch S1' - S3', S1 - S20
EK	System I UHF ch 21 - 69
EM	System B, G (PAL, SECAM) VHF ch 2 - 12, UHF ch 21 - 69
EO	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12, UHF ch 21 - 69 Cable ch S1' -S3', S1 - S20
EOG/EOG-V/EOH	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12, UHF ch 21 - 69 Cable ch S1' - S3', S1 - S41
ES	System I VHF ch A - J (Ireland), ch 4 - 13 (South Africa) UHF ch 21 - 69
RF output	
EA	System B type modulation VHF ch 0,1 switchable (preset ch1)
EDG	System K/G type modulation UHF ch 30 - 39 adjustable (preset ch 36)
EM	System B type modulation VHF ch 3,4 switchable (preset ch4)
EO/EOG/EOG-V/EOH	System G type modulation UHF ch 30 - 39 adjustable (preset ch 36)
ES	System I type modulation UHF ch 30 - 39 adjustable (preset ch 36)
Recording (line input)	
EA/EK/ES	PAL
EDG/EM/EO/ EOG/EOG-V/EOH	PAL, SECAM (recorded as MESECAM)
Playback (line output)	
EK/405EA	PAL
415EA	PAL Simulated PAL (NTSC playback only)
EDG/EM	PAL, SECAM (MESECAM Tape) NTSC 4.43 (NTSC Tape) Simulated PAL (NTSC Tape Playback only)
ES	PAL NTSC 4.43 (NTSC Tape Playback only) Simulated PAL (NTSC Tape Playback only)
EO/EOH (Y1, Y2)	PAL, SECAM (MESECAM Tape)
EOG/EOG-V/EOH (E)	PAL, SECAM (MESECAM Tape) Simulated PAL (NTSC Tape Playback only)

Video	
Line input level	0.5 - 2.0 Vp-p/75 ohms, unbalanced
Line output level	1.0 Vp-p/75 ohms, unbalanced
S/N ratio	More than 45 dB
Horizontal resolution	More than 250 lines
Audio	
Line input level	–6 dBs/50 k ohms, unbalanced
Line output level	–6 dBs/1 k ohms, unbalanced
S/N ratio	More than 40 dB
Frequency response	70 - 10,000 Hz
Recording/playback time	
CCIR	240 min. with E-240 cassette in SP mode 480 min. with E-240 cassette in LP mode
NTSC (Playback only)	160 min. with T-160 cassette in SP mode 480 min. with E-160 cassette in EP mode (EDG/EM/EOG/EOG-V/EOH (E)/ES & 415EA only)
Tape speed	
CCIR	23.39 mm/sec (SP mode) 11.695 mm/sec (LP mode)
NTSC (Playback only)	33.35 mm/sec (SP mode) 11.12 mm/sec (EP mode) (EDG/EM/EOG/EOG-V/EOH (E)/ES & 415EA only)
Quick finder	
CCIR	Approx. 7 times normal speed SP/LP mode
NTSC	Approx. 5 times normal speed SP/EP mode
FF, REW time	Approx. 2 min. with E-180 cassette
Timer	
Program	8 programs/1 year and OTR
Clock reference	Quartz crystal
Display	FL (Tape counter, Timer, etc.)
Power requirements	
EA	240 V AC, 50 Hz
EDG/ES	220 V AC, 50 Hz
EK	230 - 240 V AC, 50 Hz
EM	110 - 240 V AC, 50/60 Hz
EO/EOG/EOG-V/EOH	220 - 230 V AC, 50 Hz
Power consumption	
EA/EDG/EK/ES	19 W
EM/EOG-V	22 W
EO/EOG/EOH	20 W
Operating temperature	5°c - 40°c
Dimensions	425 (W) x 90 (H) x 276 (D) mm
Weight	4.0 kg

Standard accessories

AC cord	1
AC plug adaptor	1
Antenna cable	1
Remote control unit	1
Batteries for remote control	2 (for 405EA/EDG,415EK) 3 (Except 405EA/EDG,415EK)
Operator's manual	1

0 dBs = 0.775 V

* For improvement purposes, specifications and design are subject to change without notice.

* VIDEO PLUS + AND PLUSCODE ARE TRADEMARKS OF GEMSTAR DEVELOPMENT CORP. VIDEO PLUS + SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

* SHOWVIEW IS A TRADEMARK APPLIED FOR BY GEMSTAR DEVELOPMENT CORP. SHOWVIEW SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

* G-CODE IS A TRADEMARK APPLIED FOR BY GEMSTAR DEVELOPMENT CORP.
G-CODE SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

Unit destinations are indicated with letters as shown below.

Symbol	Power Classification	Primary destination	TV System	
			Color	Broadcast
EA	S	Australia	PAL	B, G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D, K
EDI	E	China, Hong Kong	PAL	D, K, I
EG	E	Spain, Northern Europe, Other	PAL	B, G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong kong		
EM	E	Middle East	PAL	B, G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B, G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B, G
	V	Italy		
EOG	V	Germany	PAL	B, G
ES	E	South Africa, Ireland, Hong kong	PAL	I
EV	E	South-East Asia	PAL	B, G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B, G
EGN	E	Middle East	PAL, NTSC	B, G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K, K1
SEG	E	France, Switzerland	SECAM, PAL	L, B, G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

MULTI FUNCTION MENU MODE

This is an on-screen display of the various modes you can programme via the TV screen.

LANGUAGE : To select a language for the on-screen displays.

PS PRESET : To preset TV stations.

PS CANCEL : To cancel preset TV stations.

CLOCK SET : To set the clock.

MODE : To select the SPEED (tape speed), BSP (blank skip play), OSD (on screen display), AV MUTE, SYST.(colour system), TV/VCR, DIMMER (FLD brightness) and AUTO OFF modes.

* NOTE ; SYST. selection is not available on some models.

SEARCH : To select the BLANK SEARCH and INTRO SCAN modes.

PDC SET : To set the PDC mode on or off.

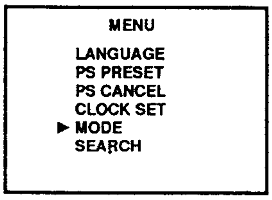
VPS SET : To set the VPS mode on or off.

VPT SET : To set the VPT function.

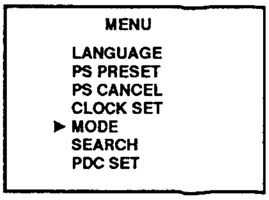
* NOTE ; PDC SET, VPS SET and VPT SET functions are not available on some models.

If necessary, refer to the respective sections in the operator's manual for detailed information.

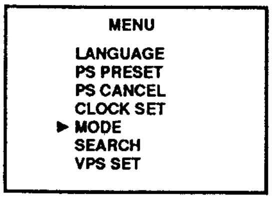
1. Press the "MENU" button on the remote control unit. The menu list screen will be displayed on the TV screen.


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
▶ MODE
SEARCH

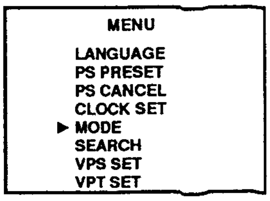
EA,EDG,G411 series & G415EA/EO/EOH (E,Y2) only


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
▶ MODE
SEARCH
PDC SET

G415EK/EOH (Y1) only


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
▶ MODE
SEARCH
VPS SET

G417EOG only


MENU
LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
▶ MODE
SEARCH
VPS SET
VPT SET

G418EOG-V only

2. Select the desired menu by setting the arrow indicator to the appropriate position with the cursor "∧" or "∨" button.
   The arrow indicator moves upwards each time when the "∧" cursor button is pressed. Pressing the "∨" cursor button will move the arrow indicator downwards.
3. Press the "OK" button.
   The selected menu screen will be displayed on the TV screen.
4. Select the desired mode (or function) by setting the arrow indicator to the appropriate position with the cursor "∨" or "∧" button. The number of the modes (or functions) depends on the sort of the menu.
5. Set the each mode (or function) by pressing the "∨" or "∧" cursor button and ">" or "<" cursor button.
6. Press the "OK" button.
   The selected menu screen will be disappeared few seconds after the "OK" button is pressed. This means the setting has been completed correctly.

MANUAL TRACKING/PICTURE/STABILITY ADJUSTMENT

Using the remote control, the VCR can be adjusted for tracking and picture sharpness anytime during the playback mode.

- Manual tracking control
  Press the "<" or ">" cursor button repeatedly until the picture is clear. During manual tracking adjustment, the tracking position is shown on the TV screen, and disappears automatically after adjustment has been completed. Use this function when performing the A/C HEAD phase adjustment.
- Picture sharpness control
  Press the "∧" button repeatedly to sharpen the picture or press the "∨" button to soften the picture.
- Stability adjustment

1) To correct picture shake during the slow motion or still mode:
   Press the "∧" or "∨" cursor button repeatedly until the picture shake is corrected.
2) To correct tracking during the still mode:
   Press the "<" or ">" cursor button repeatedly until the picture is clear.

ERROR ANNOUNCEMENT

When a malfunction occurs, the following error indicators appear on the FL display to indicate the problem when the power is turned off.

Err 1 = AL power supply has short circuited.
Err 2 = The loading motor has been stopped irregularly. (When the mechanism position detect switch is not able to read the specified code, that is to say not able to reach to the specified position within the specified time.)
Err 3 = The drum motor has been stopped. (When the drum motor does not rotate due to condensation, etc.)
Err 5 = The capstan motor has been stopped. (When the capstan motor does not rotate.)

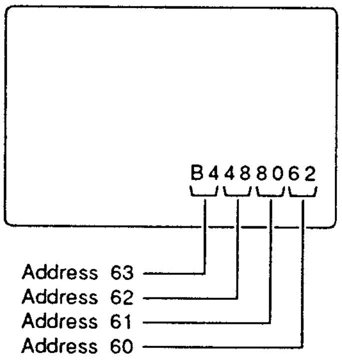
PRESETS IN THE TEST MODE

1) Engaging the "TEST MODE"

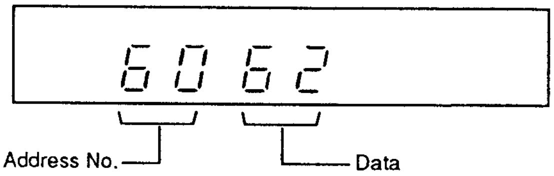
To set the VCR to the TEST MODE, press the "reset" button on the front panel first then plug in the AC power cord while pressing and holding both the "POWER" and "STOP/EJECT" buttons on the front at the same time. Next, release your fingers from both the buttons a few seconds later and press the "POWER" button.

2) Version code preset

1. Engage the "test mode". The version (model) code will be displayed on the lower right part of the screen in 8 digit form.



2. While pressing both the "FF" and "RWD" buttons, press the "RESET" button. The address and its data will be shown in the FL display.



3. Select the address "60" by pressing the "FF" or "RWD" button.
4. Choose the data in the address 60 column that corresponds to the model number you are working on from the following list. Set the chosen data value by pressing the "STOP" or "PLAY" button.
5. Memorize the data into the EEP ROM IC by pressing the "REC" button.
6. The address "61" and its data will be shown in the FL display. Repeat the presetting (steps 4 to 5) for addresses "61", "62" and "63" in the same manner as address "60".

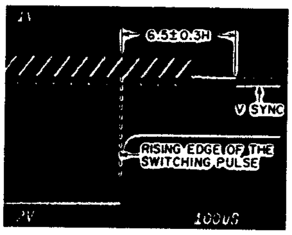
7. Disconnect the AC power cord from the AC outlet to disengage the version (model) code preset mode.

MODEL	MODEL CODE	ADDRESS			
		60 (h)	61 (h)	62 (h)	63 (h)
VS-G405EA	34C2042C	2C	04	C2	34
VS-G405EDG	36C005AC	AC	05	C0	36
VS-G411EM(E)	74C007AC	AC	07	C0	74
VS-G411EM(Y7)	74C007AC	AC	07	C0	74
VS-G411EOH(Y1)	74C8066C	6C	06	C8	74
VS-G411ES	70C007AC	AC	07	C0	70
VS-G415EA	F4C206AC	AC	06	C2	F4
VS-G415EK	F4C4842C	2C	84	C4	F4
VS-G415EO	F4C0066C	6C	06	C0	F4
VS-G415EOH(E)	F4C806EC	EC	06	C8	F4
VS-G415EOH(Y1)	F4C8866C	6C	86	C8	F4
VS-G415EOH(Y2)	F4C8066C	6C	06	C8	F4
VS-G417EOG	F7C806EC	EC	06	C8	F7
VS-G418EOG-V	F7C806EC	EC	06	C8	F7
VS-G511EDG	36C007AC	AC	07	C0	36

NOTE : This version code preset is absolutely necessary when the IC404 (EEP-ROM) on the MAIN PCB is replaced.

3) Video switching point preset

1. Engage the "test mode".
2. Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the TP1 (V-SWP) on the PRE AMP PCB for triggering.
3. Play back the reference tape TF-530RFS (AT-751775) and press the "REC" button during playback.
4. Confirm that the switching point is positioned 6.5 ± 0.3 H before the left edge of the V-sync as shown.



NOTE:

This switching point preset is absolutely necessary when conditions are as follows.

- When the video head drum (upper drum) is replaced.
- When the DRUM MOTOR PCB or DRUM MOTOR's ROTARY MAGNET (ROTARY PLATE) is replaced.
- When the SERVO/SYSCON MI-COM or EEP ROM IC on the MAIN PCB is replaced.

4) Memorization of the reference RF envelope detect voltage (I-HQ)

For correct operation of the I-HQ tape tuning system, memorization of the reference RF envelope detect voltage is absolutely necessary. When the VIDEO HEAD DRUM, PRE AMP PCB or EEP ROM IC in the MAIN PCB is replaced for any reason, memorize the reference RF envelope detect voltage according to the following procedure.

1. Set the tape speed to "SP mode".
2. Make a recording on the I-HQ test tape "TF-556AT" (AT-751822J) and rewind it to the exact point where the recording was started.
3. Set the VCR to the "test mode" then start playback.
4. Reference RF envelope detect voltage data in the memory is displayed in 2 digits in the hours display part of the FL display and the present envelope detect voltage data is displayed in 2 digits in the minutes display part (the data is displayed in hexadecimal numbers).
5. After the auto tracking has been activated, press the "CANCEL" button on the remote control unit. The present RF envelope detect voltage data will be transferred to the hours part's 2 digits and memorized in the EEP ROM IC.
6. Cancel the "test mode" then set the tape speed to "LP mode" and repeat steps 2 to 5.

5) Other facilities in the test mode

1. Tracking position display

In the "SP play" mode, tracking position data can be displayed on the FL display. Data is displayed in 64 steps in hexadecimal numbers from "00" to "3F" in the seconds display part on the FL display. Pressing the "TV/VCR" button on the remote control unit during playback directly sets the tracking to the maximum "3F" position and pressing the "COUNTER RESET" button sets it to the minimum "00" position.

Pressing the "PLAY" button during playback sets tracking to the center position "1F" automatically. If "1F" does not appear even when the "PLAY" button is pressed, keep pressing the "<" or ">" cursor button on the remote control unit until "1F" is indicated and then press the "OK" button to memorize the position.

2. TIMER function confirmation

During the "test mode", the clock's minute part is advanced by a second when the power is turned off. This means that the "timer" function can be confirmed in a short time.

3. Suspension of the tape protection system

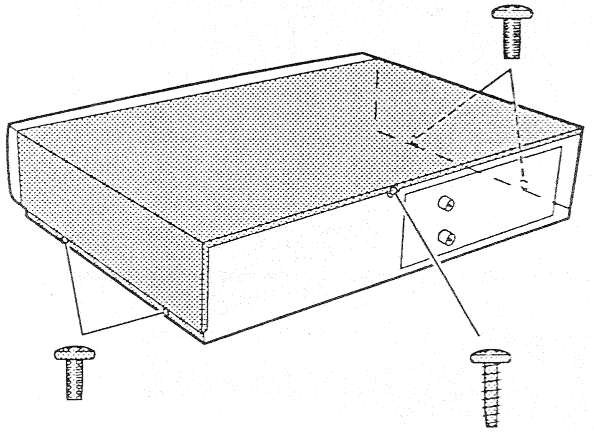
When the VCR is not in the "test mode", the "REC PAUSE" mode will be released after 30 minutes in order to protect the tape. The "STILL" mode will also be released after 5 minutes. During the "test mode", however this tape protection system will not operate.

※ Video head rotation will stop 5 min. after the "REC PAUSE" mode has been engaged even during the test mode.

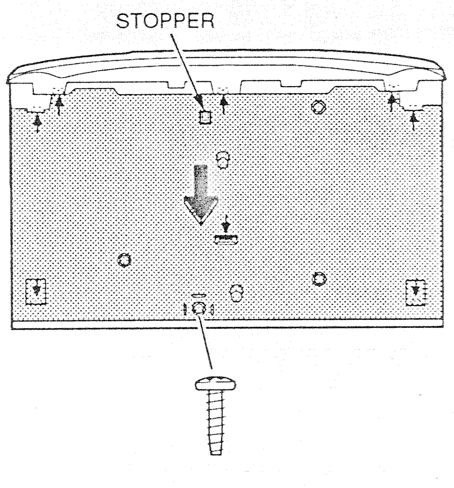
I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in the reverse order.
When reattaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

1. Removal of UPPER COVER

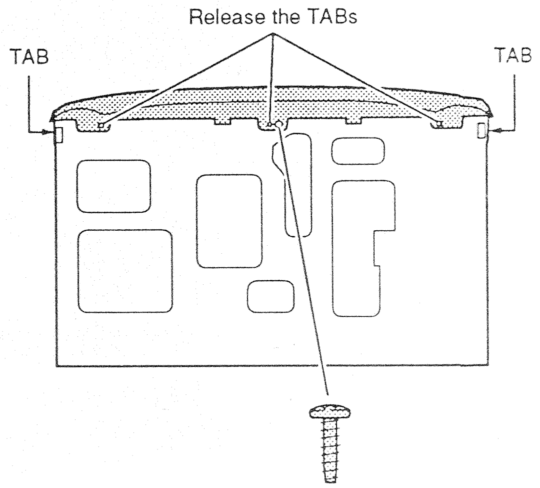


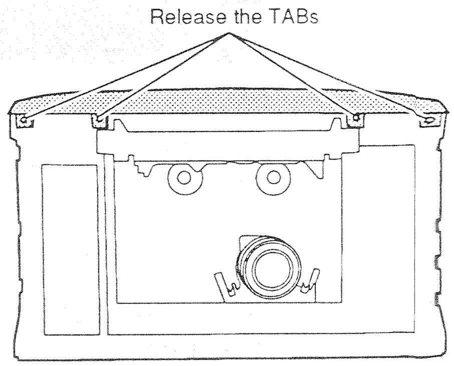
2. Removal of BOTTOM COVER



While pressing the stopper downward, slide the Bottom cover in the direction of the arrow for removal.
When replacing the Bottom cover, make sure it is secured with the tabs.

3. Removal of FRONT PANEL





Disconnection the P103 connector on the MAIN PCB or P2 connector on the DECODER (A) PCB.

II. PRINCIPAL PARTS LOCATION

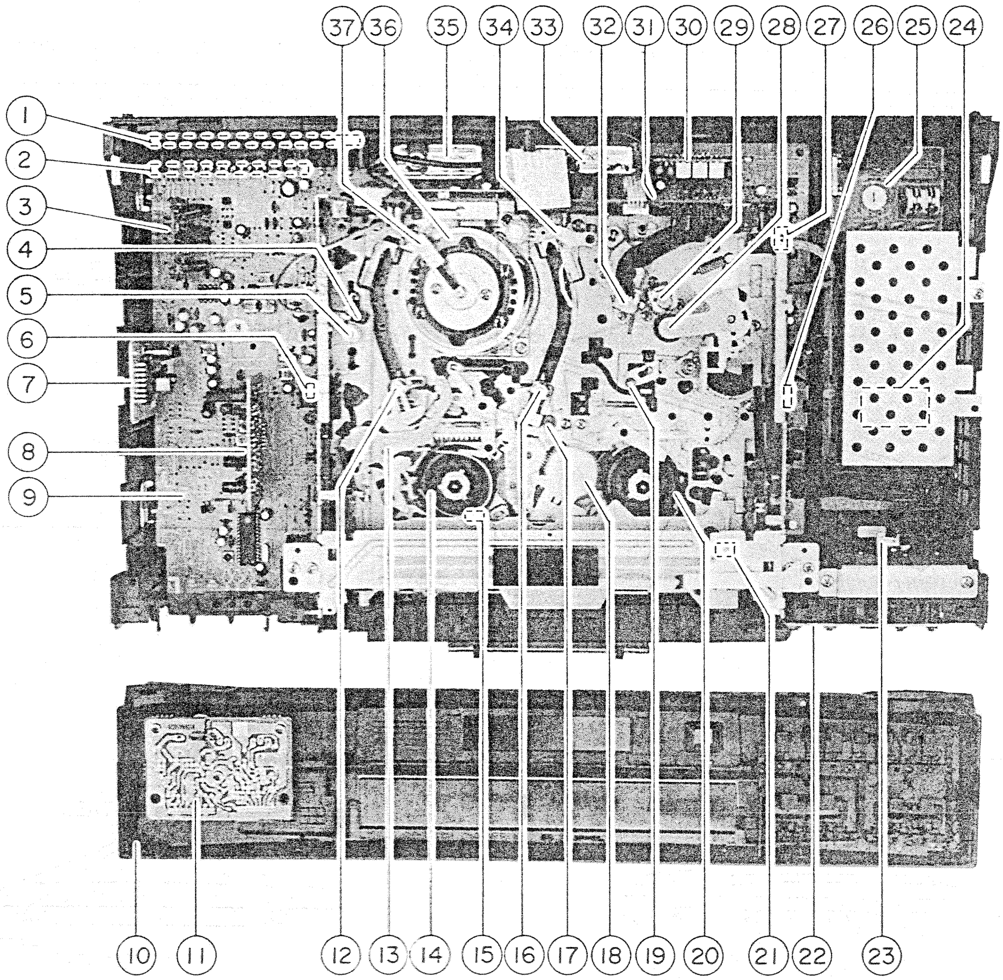


Fig. 2-1 Top view

1. DECODER (A) PCB (EOG, EOG-V, EOH[Y2] only)
2. DECODER (B) PCB (EOG, EOG-V, EOH[Y2] only)
3. SAT PCB (EK, EO, EOH[E/Y1] only)
4. FULL TRACK ERASE HEAD
5. SUPPLY TAPE GUIDE
6. END SENSOR
7. VPS/PDC PCB (EK, EOG, 415EOH[Y1] only)
   VPST/PDCT PCB (EOG-V only)
8. CDR PCB
9. MAIN PCB
10. FRONT PANEL BLOCK
11. FRONT PCB
12. SUPPLY LOADING LEADER
13. TENSION ARM
14. SUPPLY REEL TABLE
15. REC SAFETY SWITCH
16. TAKE UP LOADING LEADER
17. SENSOR LED
18. IDLER PART
19. REVIEW ARM
20. TAKE UP REEL TABLE
21. S-VHS TAPE DETECT SWITCH
22. OPERATION PCB
23. TR(B) PCB
24. POWER TRANSFORMER
25. POWER SUPPLY PCB
26. START SENSOR
27. TR(A) PCB
28. PINCH ROLLER
29. CAPSTAN MOTOR BLOCK
30. VIF UNIT
31. PRE AMP PCB
32. A/C HEAD
33. TUNER UNIT
34. HEAD CLEANER BLOCK
35. RF CONVERTOR UNIT
36. VIDEO HEAD DRUM BLOCK
37. EARTH BRUSH

※ The photograph on this page is of model VS-G415EOH (Y1).

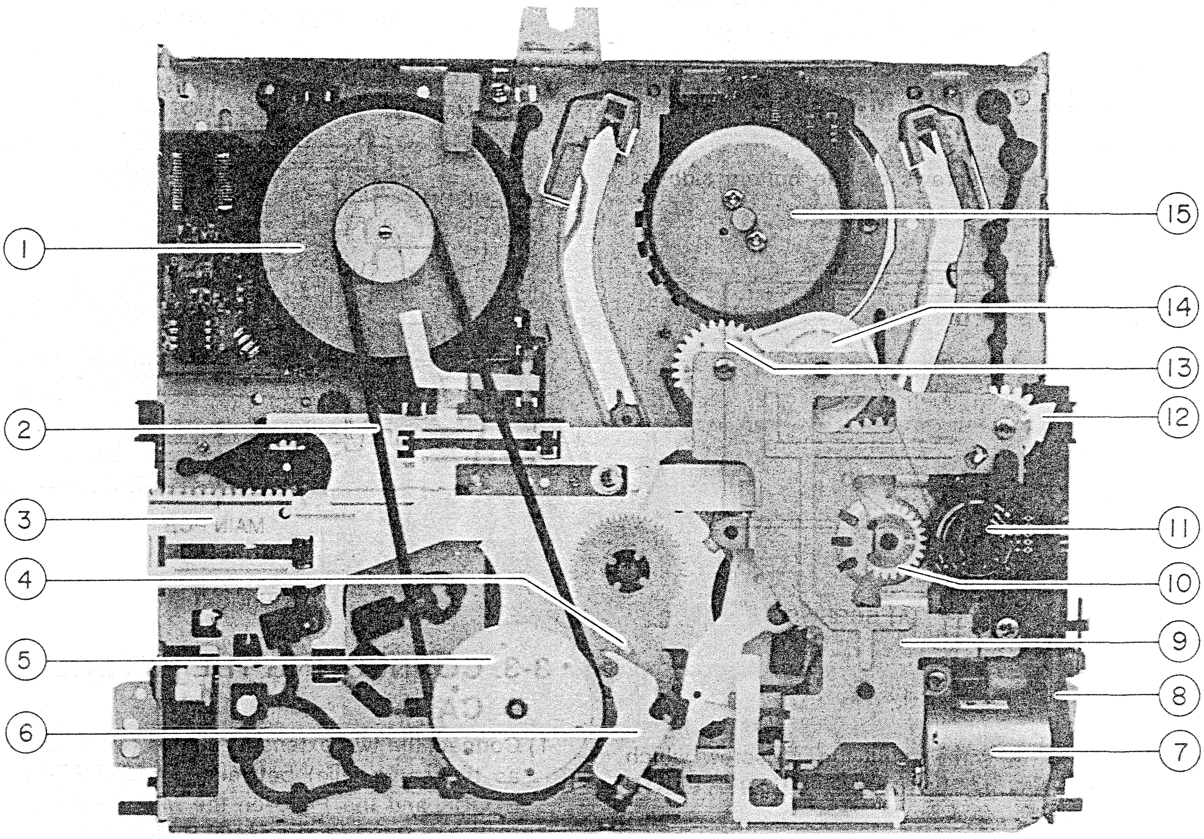


Fig. 2-2 Bottom view

1. CAPSTAN MOTOR BLOCK
2. CAPSTAN BELT
3. PINCH SLIDER
4. GEAR COUPLING BLOCK
5. CLUTCH DISK PART
6. COUPLING ARM
7. LOADING MOTOR
8. LM/MS PCB
9. LOADING DRIVE BLOCK
10. CAM SLIDER GEAR
11. MODE SELECT SWITCH
12. FRONT LOADING GEAR
13. TOGGLE (T) GEAR BLOCK
14. TOGGLE (S) GEAR BLOCK
15. DRUM MOTOR BLOCK

III. VIEWING THE OPERATION OF THE BOTTOM SIDE OF THE MECHANISM BLOCK

※ In case you want to check the operation of the bottom side of the mechanism block, proceed as follows.

3-1. REMOVAL OF THE FRONT PANEL

1) Remove the FRONT PANEL (refer to step 1-3).

3-2. REMOVAL OF THE MECHANISM BLOCK

1) Remove the three Ⓐ screws on the bottom side as shown in Fig. 3-1.

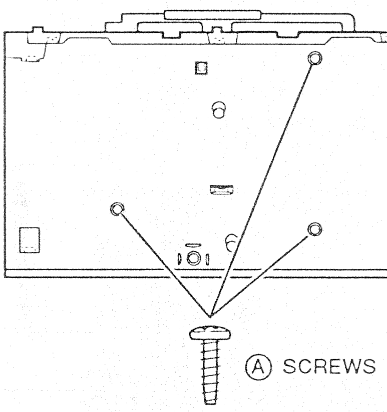


Fig. 3-1

2) Remove the two Ⓑ screws and the Ⓒ screw which retain the MECHANISM BLOCK and the EARTH PLATE as shown in Fig. 3-2.

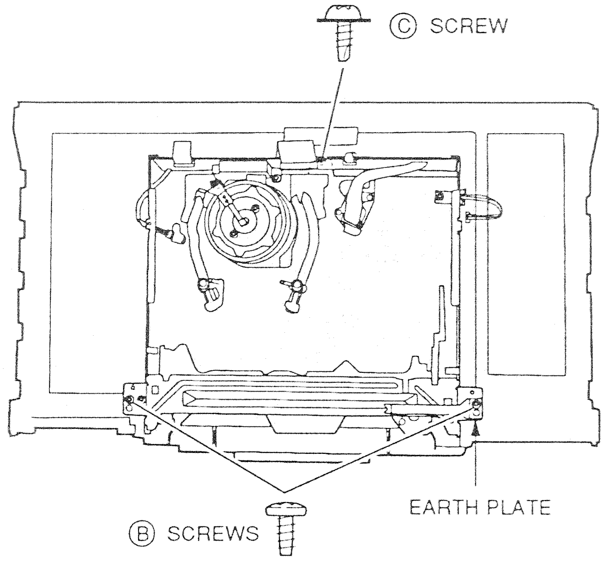


Fig. 3-2

3) Remove the MECHANISM BLOCK and place a video cassette which is no longer needed or something else that is substitutable (must be made of insulated material) on the MAIN PCB.
4) Place the MECHANISM BLOCK on the tape etc., standing it on end as shown in Fig. 3-3 with care not to damage the flat cables on the PRE AMP PCB.

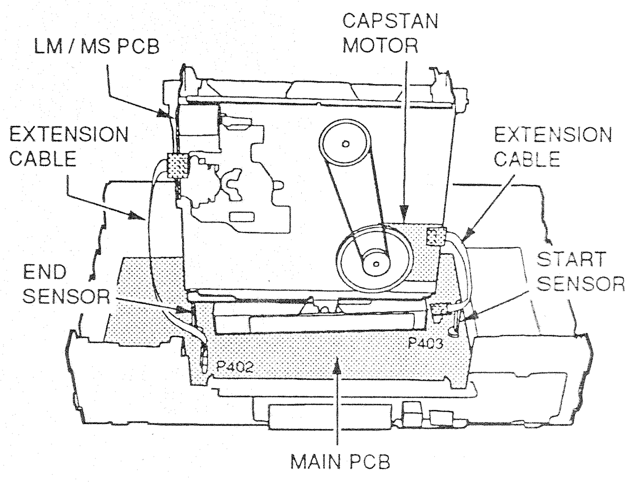


Fig. 3-3

3-3. CONNECTING THE EXTENSION CABLE

1) Connect the two extension cables (which are provided as the service jig) between the CAPSTAN MOTOR BLOCK and the P403 on the MAIN PCB, the LM/MS PCB and P402 on the MAIN PCB.

NOTE : The "FRONT" mark of the extension cable's PCB must be facing front when connecting.

3-4. TURNING THE POWER ON

1) Place a cover (a ball point pen's cap etc.) on the start sensor as shown in Fig. 3-3 in order to intercept the light to the sensor. The cap must be black or metal.
2) Engage the test mode (refer to in the information section, "PRESETS IN THE TEST MODE").
3) Remove the cover on the start sensor immediately after the cassette tape is inserted in the ejector so that the tape is drown down automatically.
4) Cover both the start and end sensors at the same time with the covers right before the cassette tape reaches the lower position.
   Although the reel pulse is not generated, any modes except "REC" mode can be operated in this condition.
5) In case you want to change the tape, eject the present tape by pressing the "EJECT" button then remove the cover on the end sensor and repeat the steps 3) to 4).

IV. DISASSEMBLY OF THE MAIN COMPONENTS

4-1. REMOVAL OF THE MECHANISM BLOCK

NOTE: Some parts in the mechanism block require complete removal of the mechanism block from the chassis when performing servicing.
Set the loading mechanism to the "EJECT" position by pressing the "EJECT" button, then disconnect the AC power plug from the AC socket before proceeding. This sets the loading mechanism to the "reference position".

4-1-1. Removal of the PRE AMP PCB

1) Disconnect the two flat cables from the P1 and P2 connectors respectively and then disconnect the P102 connector.

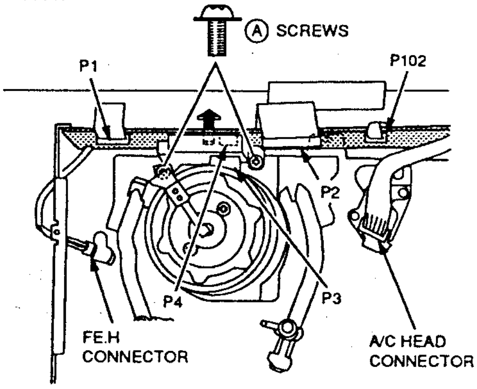


Fig. 4-1

2) Disconnect the connectors on the AC/HEAD and FULL TRACK ERASE HEAD.
3) Remove one of the Ⓐ screw and remove the EARTH BRUSH.
4) Remove the other Ⓐ screw, then press the lower side of the shield case in the direction of the arrow as shown in Fig. 4-1.
5) Proceed in the reverse order for installation. Carefully align the connectors between the one on the DRUM MOTOR PCB, the one on the LOWER DRUM and P4, P3 on the PRE AMP PCB.

4-1-2. Removal of the TR (A) PCB

1) Remove the Ⓑ transistor retaining screw, then remove the TR (A) PCB from the MECHANISM BLOCK.

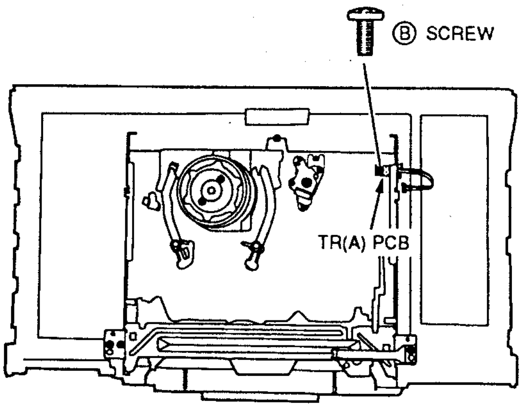


Fig. 4-2

4-1-3. Removal of the MECHANISM BLOCK

1) Remove the three retaining screws on the bottom (refer to Fig. 3-1 on page 10).
2) Remove the two Ⓓ screws and the Ⓔ screw which retain the MECHANISM BLOCK and the EARTH PLATE as shown in Fig. 4-3.

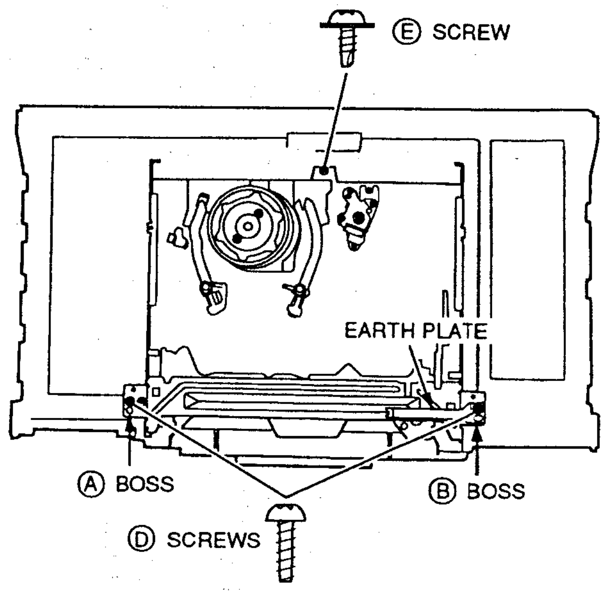


Fig. 4-3

3) Pull up the MECHANISM BLOCK carefully for detaching it from the chassis and the MAIN PCB.

4-1-4. Installation of the MECHANISM BLOCK

1) Carefully align the Ⓐ and Ⓑ bosses on the chassis with their corresponding holes on the MECHANISM BLOCK and then tighten the three screws (refer to Fig. 4-3).
2) Proceed in the reverse order of 4-1-1 to 4-1-2 for installation.

4-2. REMOVAL OF THE EJECTOR BLOCK

4-2-1. Removal of the CASSETTE LOAD BLOCK

1) Remove the two Ⓐ screws on the UPPER PLATE, as shown in Fig. 4-4 then remove the UPPER PLATE.

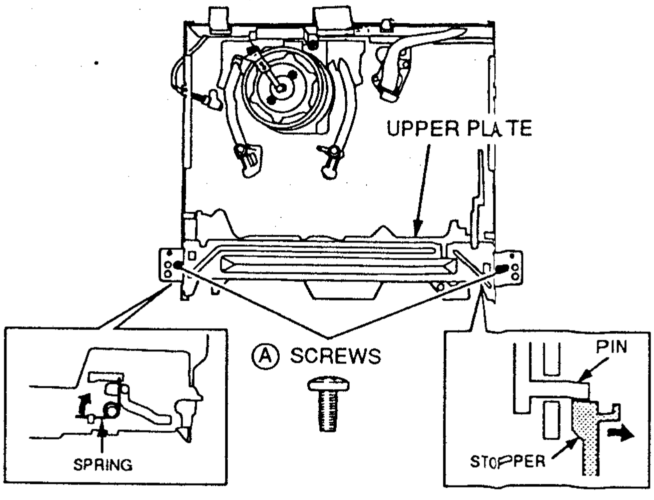


Fig. 4-4

2) Unhook the spring and remove it as shown in Fig. 4-4.
3) While pressing the right STOPPER in the direction of the arrow (refer to Fig. 4-4), gently remove the right side pin of the CASSETTE LOAD BLOCK from the rail by pulling it in the forward direction. Next, remove the left side pin in the same manner, then remove the CASSETTE LOAD BLOCK. To avoid damaging the pins of the CASSETTE LOAD BLK and the rail of the MECHA. FRAME, do not use excessive force when removing the CASSETTE LOAD BLK.

4-2-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (refer to Fig. 4-5) by pressing the stopper tab with a flat head (−) screwdriver. Then remove the shaft's right end from the bracket.

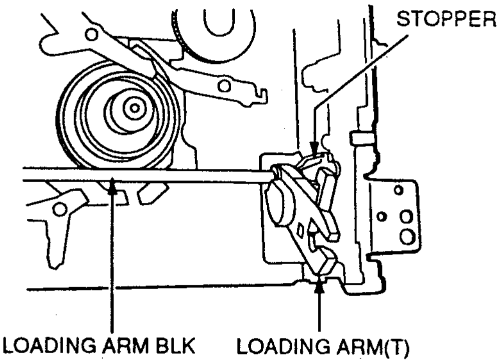


Fig. 4-5

2) Hold the LOADING ARM (T) and then pull out the shaft's left end from the bracket. Take special care when removing it to avoid damaging the pins (refer to Fig. 4-5).

4-2-3. Reassembling

1) Proceed in the reverse order of 4-2-1 to 4-2-2 for installation.

4-3. REMOVAL OF THE MODE SELECT SWITCH

Before proceeding with removal of the MODE SELECT SWITCH, the loading mechanism must be set to the "reference" position. If it has not already been set, use the following procedure to set the reference position.

※ Connect a 6V battery to the loading motor until both the cam slider gear and mode select switch reach the reference position (refer to Fig. 4-7).

4-3-1. Removal of the MODE SELECT SWITCH

1) Unsolder the 5 leads of the mode select switch.

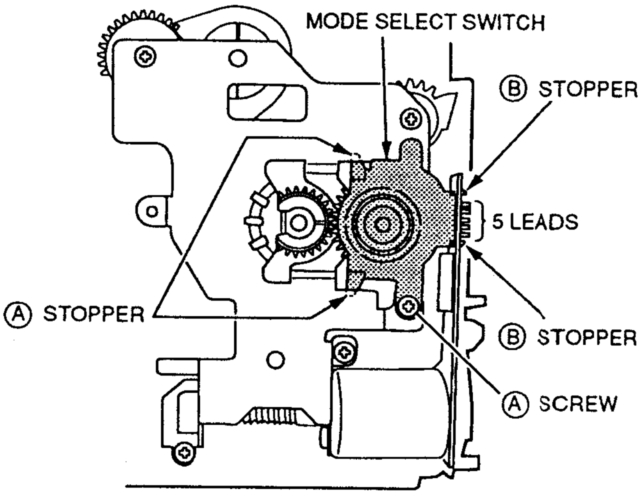


Fig. 4-6

2) Remove the Ⓐ screw.
3) While releasing the two Ⓐ stoppers and two Ⓑ stoppers, carefully remove the MODE SELECT SWITCH by pulling it up and to the left.

4-3-2. Installation of the MODE SELECT SWITCH

1) Install the mode select switch in the reverse order of 4-3-1. When mounting the mode select switch, align the mode select switch's Ⓐ mark with the Ⓑ mark on the cam slider gear as shown in Fig. 4-7.

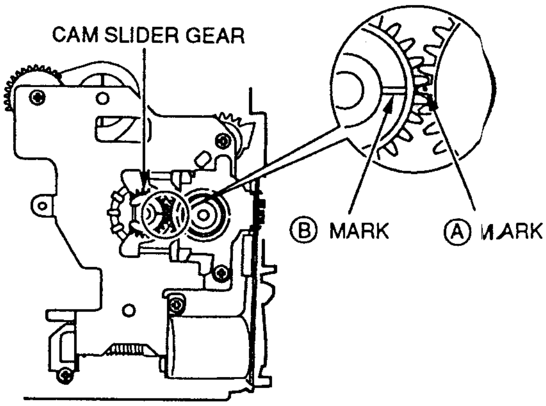


Fig. 4-7

4-4. DISASSEMBLY OF THE LOADING DRIVE BLOCK

※ Set the loading mechanism to the "reference" position. Refer to 4-3, "REMOVAL OF THE MODE SELECT SWITCH" before proceeding.

4-4-1. Removal of the LOADING DRIVE BLOCK

1) Remove the MODE SELECT SWITCH (refer to 4-3-1 "removal of the MODE SELECT SWITCH") if necessary.
2) Remove the Ⓐ, Ⓑ, Ⓒ and Ⓓ screws then remove the LOADING DRIVE BLOCK as shown in Fig. 4-8.

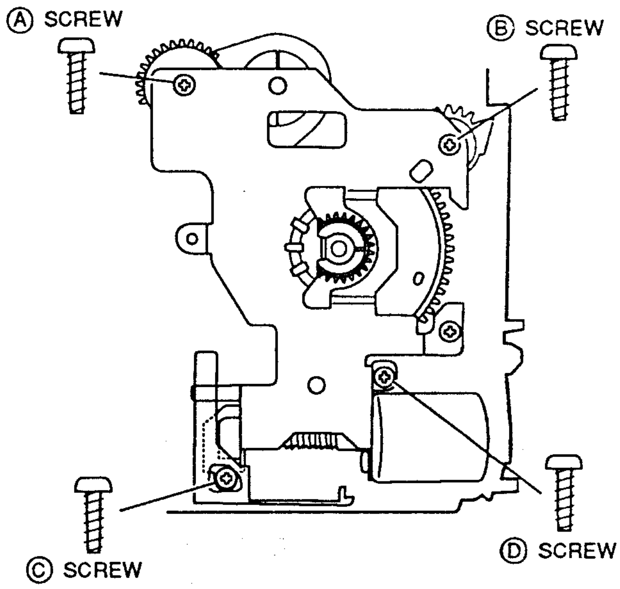

Ⓐ SCREW
Ⓑ SCREW
Ⓒ SCREW
Ⓓ SCREW

Fig. 4-8

4-4-2. Replacement of the LOADING MOTOR

1) Remove the LOADING DRIVE BLOCK (refer to 4-4-1)
2) Unsolder the two leads of the LOADING MOTOR.
3) Remove the two installation screws.

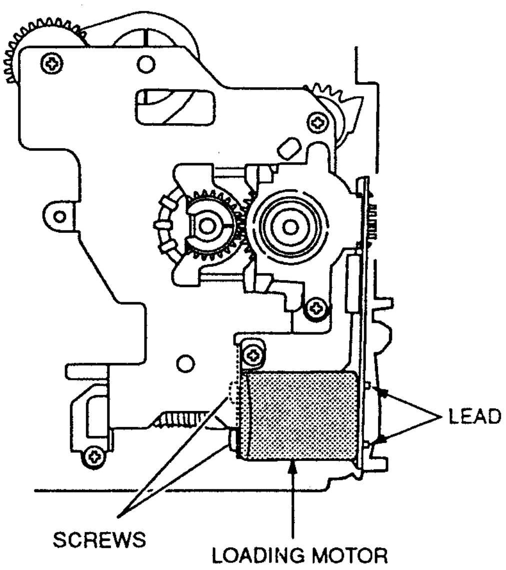

LEAD
SCREWS
LOADING MOTOR

Fig. 4-9

4) Reassemble in the reverse order for installation.

4-5. REASSEMBLY OF THE LOADING MECHANISM BLK

4-5-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEARs (T) and (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig. 4-10.

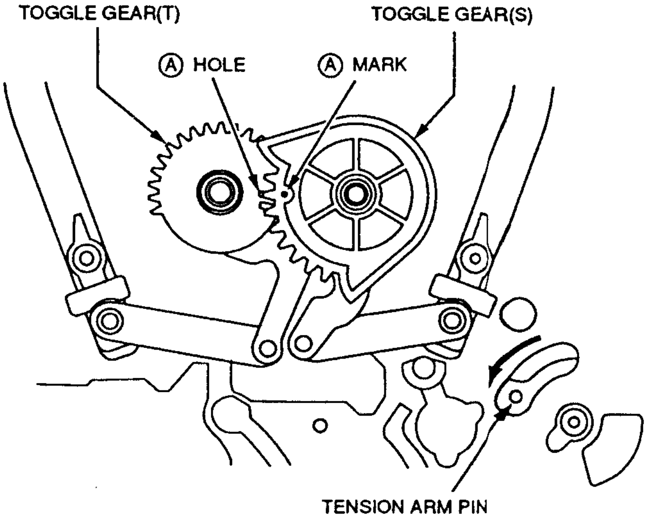

TOGGLE GEAR(T)
TOGGLE GEAR(S)
Ⓐ HOLE
Ⓐ MARK
TENSION ARM PIN

Fig. 4-10

NOTE : When positioning the TOGGLE GEAR (S), the TENSION ARM's pin should be moved in the direction of the arrow before placing the TOGGLE GEAR (S) onto its shaft.

4-5-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig. 4-11.

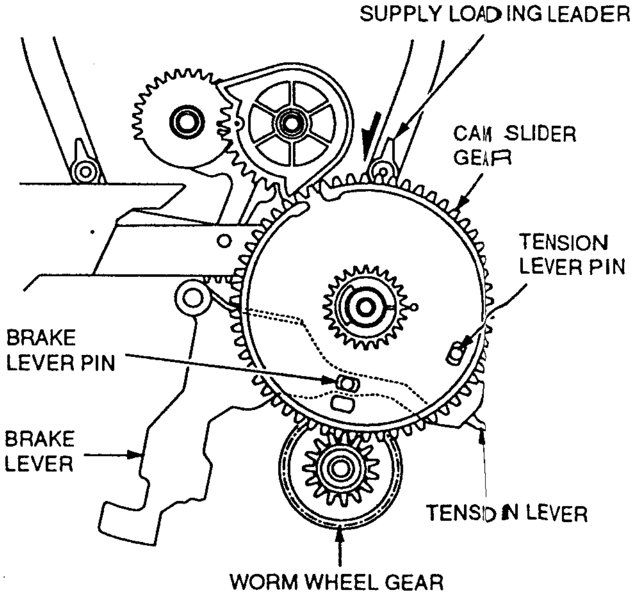

SUPPLY LOADING LEADER
CAM SLIDER GEAR
TENSION LEVER PIN
BRAKE LEVER PIN
BRAKE LEVER
TENSION LEVER
WORM WHEEL GEAR

Fig. 4-11

2) Place the CAM SLIDER GEAR on the shaft and adjust the position of the BRAKE LEVER and TENSION LEVER so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig. 4-11. When inserting the CAM SLIDER GEAR onto its shaft, press the SUPPLY LOADING GEAR slightly in the direction of the arrow to make installation easy.

3) Attach the FRONT LOADING GEAR so that the Ⓐ mark on the FRONT LOADING GEAR aligns with the Ⓑ mark on the FRONT LOADING SLIDER and that the Ⓒ mark on the FRONT LOADING GEAR aligns with the Ⓓ mark on the CAM SLIDER GEAR as shown in Fig. 4-12.

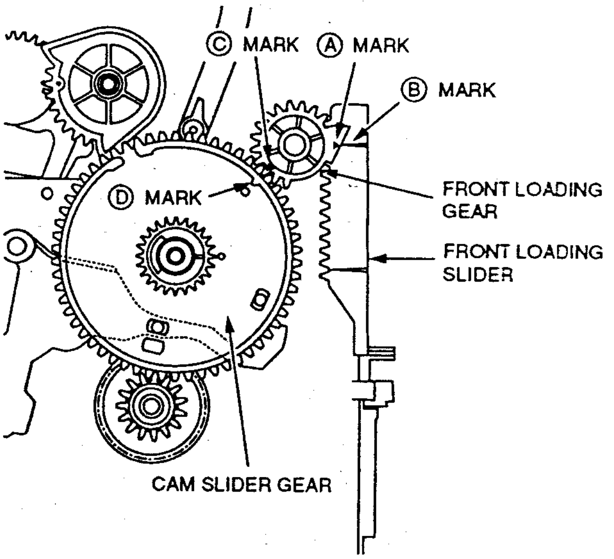

Ⓒ MARK
Ⓐ MARK
Ⓑ MARK
Ⓓ MARK
FRONT LOADING GEAR
FRONT LOADING SLIDER
CAM SLIDER GEAR

Fig. 4-12

4-5-3. Installation of the LOADING BLOCK & MODE SELECT SWITCH

1) Install the LOADING DRIVE BLOCK as shown in Fig. 4-13. Align the Ⓐ mark on the MODE SELECT SWITCH's gear with the Ⓑ mark on the CAM SLIDER GEAR when installing. (Refer to 4-3-2, "Installation of the MODE SELECT SWITCH".)

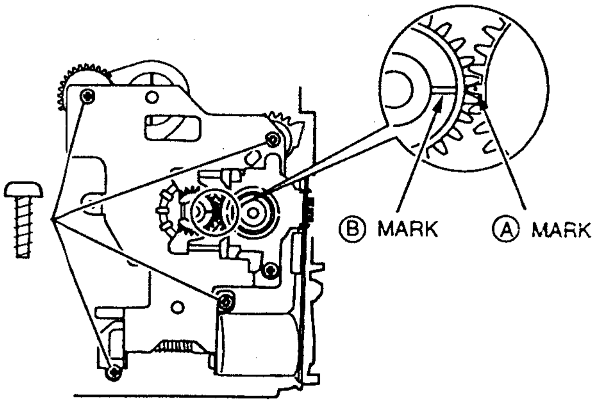


Fig. 4-13

4-6. REPLACEMENT OF THE DISK CLUTCH BLOCK & GEAR COUPLING BLOCK

1) Remove the SLIT WASHER as shown in Fig. 4-14.

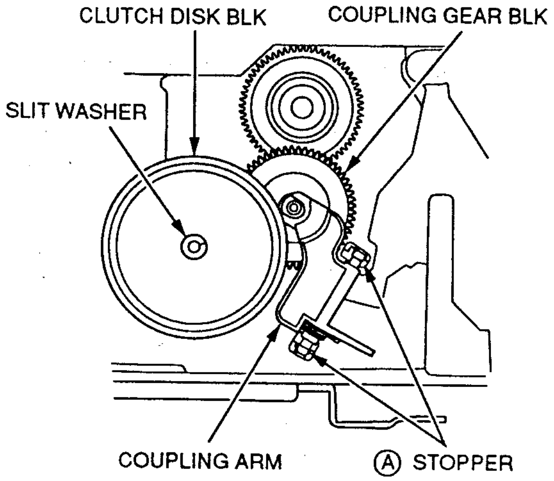

CLUTCH DISK BLK
COUPLING GEAR BLK
SLIT WASHER
COUPLING ARM
Ⓐ STOPPER

Fig. 4-14

2) Release the two Ⓐ stoppers of the COUPLING ARM and pull up the CLUTCH DISK BLOCK and COUPLING GEAR BLOCK at the same time.

3) Reassemble in the reverse order for installation.

4-7. REPLACEMENT OF THE REVIEW BRAKE PART & IDLER PART

4-7-1. Replacement of the REVIEW BRAKE PART

1) Un hook the Ⓐ spring, then release the stopper of the REVIEW BRAKE PART and remove it.

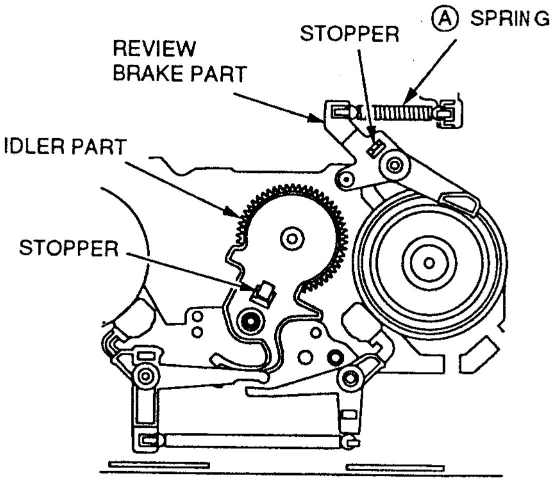

Ⓐ SPRING
STOPPER
REVIEW BRAKE PART
IDLER PART
STOPPER

Fig. 4-15

2) Reassemble in the reverse order for installation.

4-7-2. Replacement of the IDLER PART

1) Remove the CASSETTE LOAD BLOCK & LOADING ARM BLOCK. (Refer to 4-2, "Removal of the EJECTOR BLOCK".)
2) Release the stopper of the IDLER PART and remove it as shown in Fig. 4-15.
3) Reassemble in the reverse order for installation.

4-8. REPLACEMENT OF THE PINCH ROLLER BLOCK

1) Remove the Ⓐ spring, then remove the PINCH ROLLER ARM BLOCK by turning it in the direction of the arrow and pulling it upward as shown in Fig. 4-16.

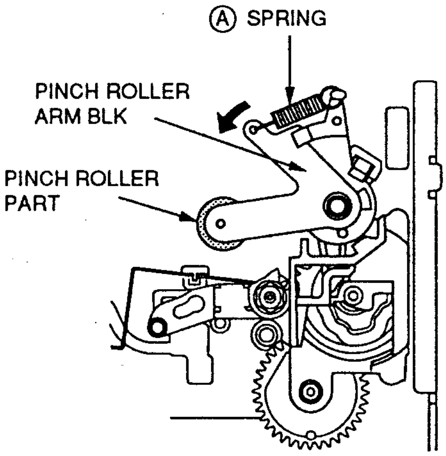

Ⓐ SPRING
PINCH ROLLER ARM BLK
PINCH ROLLER PART

Fig. 4-16

2) Reassemble in the reverse order for installation.

4-9. DISASSEMBLY OF THE PINCH LEVER & PINCH HOLDER

4-9-1. Removal of the PINCH LEVER and PINCH HOLDER

1) Remove the two Ⓐ screws then remove the PINCH LEVER and PINCH HOLDER.

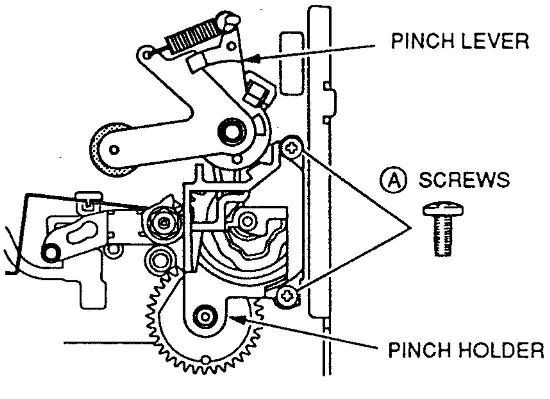

PINCH LEVER
Ⓐ SCREWS
PINCH HOLDER

Fig. 4-17

4-9-2. Installation of the PINCH LEVER and PINCH HOLDER

1) Align the Ⓐ hole on the PINCH SLIDER with the Ⓐ mark on the PINCH GEAR through the hole on the chassis as shown in Fig. 4-18.

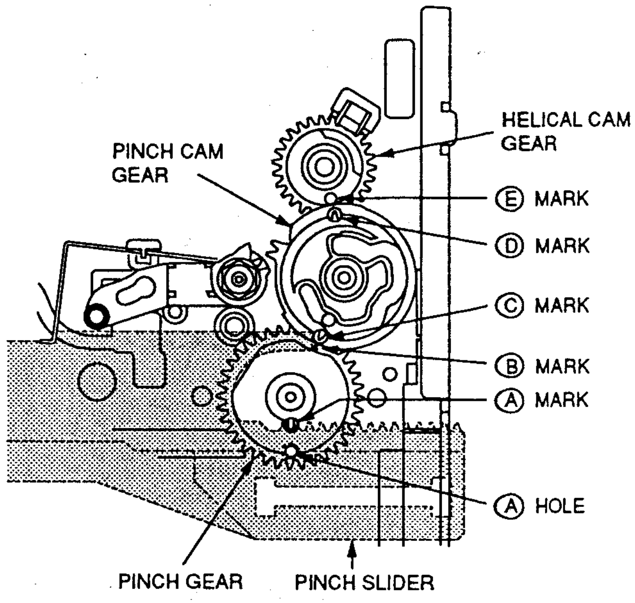

HELICAL CAM GEAR
PINCH CAM GEAR
Ⓔ MARK
Ⓓ MARK
Ⓒ MARK
Ⓑ MARK
Ⓐ MARK
Ⓐ HOLE
PINCH GEAR
PINCH SLIDER

Fig. 4-18

2) Align the Ⓑ mark on the PINCH GEAR with the Ⓒ mark on the PINCH CAM GEAR and the Ⓓ mark on the PINCH CAM GEAR with the Ⓔ mark on the HELICAL CAM GEAR as shown in Fig. 4-18.
3) Install the PINCH LEVER and PINCH HOLDER in the reverse order.

4-10. REPLACEMENT OF THE CAPSTAN MOTOR BLOCK

1) Remove the three Ⓐ screws as shown in Fig.4-19.

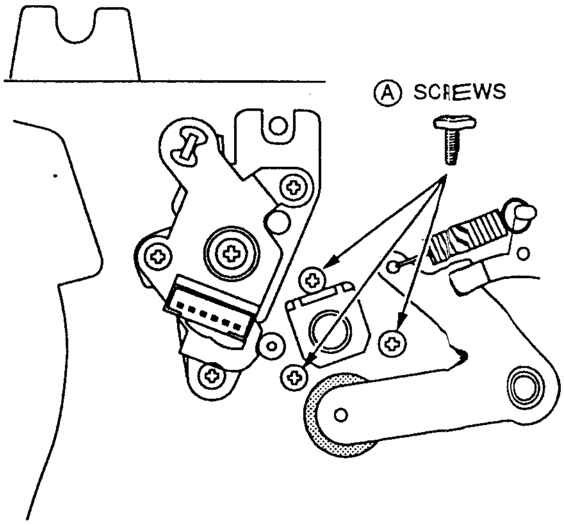
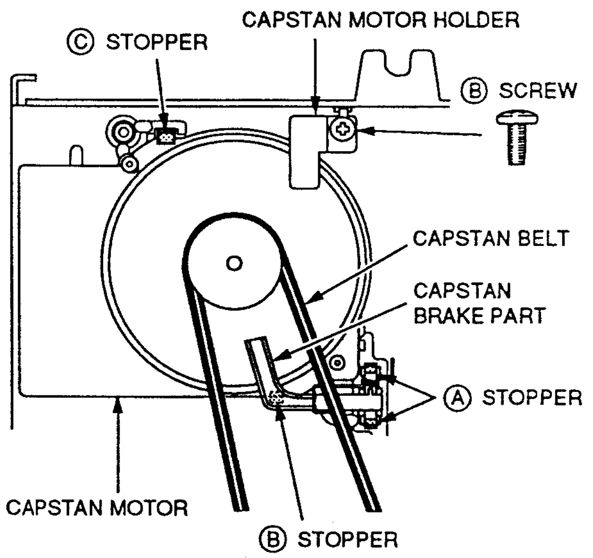


Fig. 4-19

2) Remove the CAPSTAN BELT.

3) Remove the Ⓑ screw and then remove the CAPSTAN MOTOR HOLDER.



CAPSTAN MOTOR HOLDER
Ⓒ STOPPER
Ⓑ SCREW
CAPSTAN BELT
CAPSTAN BRAKE PART
Ⓐ STOPPER
CAPSTAN MOTOR
Ⓑ STOPPER

Fig. 4-20

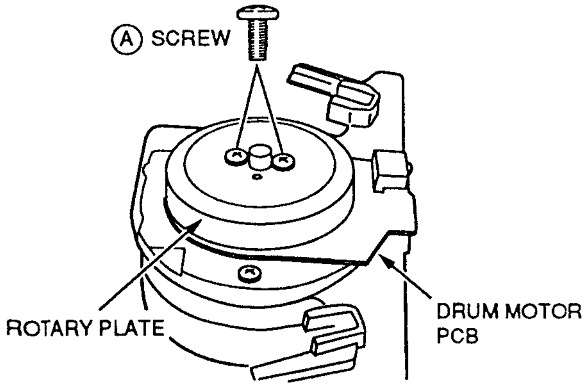
4) Release the two Ⓐ stoppers and remove the CAPSTAN BRAKE PART.

5) Remove the CAPSTAN MOTOR BLOCK while releasing the Ⓑ and Ⓒ stoppers.

6) Proceed in the reverse order for installation.

4-11. DRUM MOTOR PC BOARD REPLACEMENT

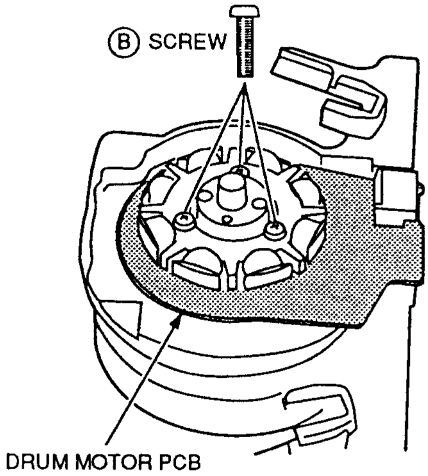
1) Remove the two Ⓐ screws on the ROTARY PLATE and then remove it.
(If the PRE AMP PCB is not removed yet, remove it first before removing the Ⓐ screws. Refer to 4-1-1, "Removal of the PRE AMP PCB".)



Ⓐ SCREW
ROTARY PLATE
DRUM MOTOR PCB

Fig. 4-21

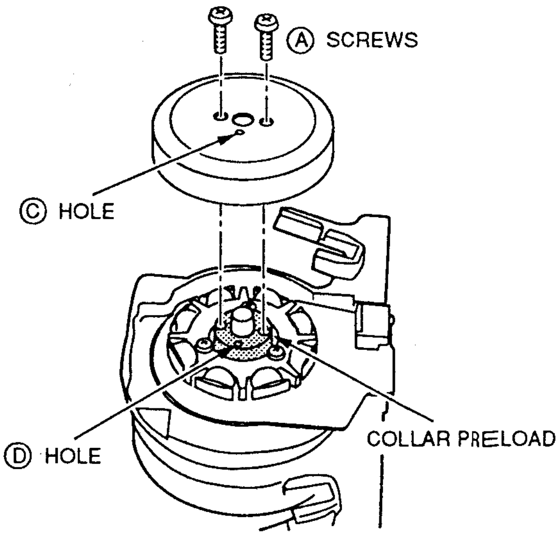
2) Remove the three Ⓑ screws which retain the DRUM MOTOR PCB and replace it.



Ⓑ SCREW
DRUM MOTOR PCB

Fig. 4-22

3) Attach the ROTARY PLATE to the collar preload so that the rotary plate Ⓒ hole and collar preload Ⓓ hole line up.



Ⓐ SCREWS
Ⓒ HOLE
Ⓓ HOLE
COLLAR PRELOAD

Fig. 4-23

4) After replacement, PB switching point adjustment (INFORMATION, PRESET IN THE TEST MODE, #3) is absolutely necessary for the proper performance.

4-12. REPLACEMENT OF THE UPPER DRUM

4-12-1. Removal of the UPPER DRUM

1) Unsolder the eight relay leads and remove the two upper drum fixing screws as shown in Fig. 4-24.

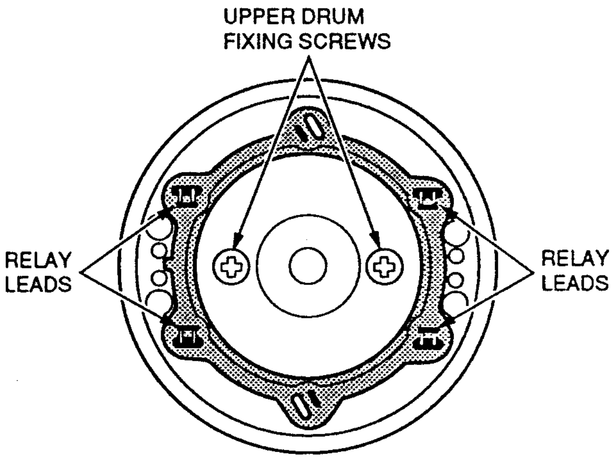


Fig. 4-24

2) Gently lift and remove the UPPER DRUM.

4-12-2. Installation of the UPPER DRUM

1) Attach the UPPER DRUM to the LOWER DRUM ROTOR, so that the upper drum convex Ⓐ and lower drum rotor's white mark line up, as shown in Fig. 4-25.

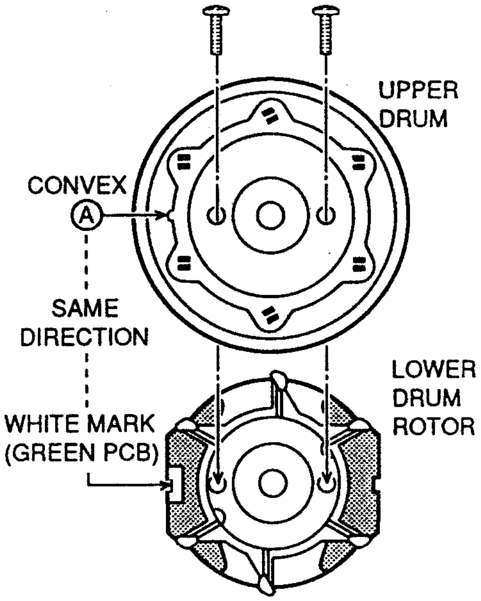


Fig. 4-25

NOTE : Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

(a) Do not loosen the set screw on the collar preload.
(b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
(c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
(d) Make sure that the upper drum fixing screw holes, on the rotary transformer part, and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(e) Tighten the two upper drum fixing screws alternately and gradually.

4-12-3. After replacement

After replacement, the following adjustments are necessary for the proper performance.

1) Control head phase adjustment. (MECHANICAL ADJUSTMENT 5-3-3.)
2) PB switching point adjustment. (INFORMATION, PRESET IN THE TEST MODE #3)
3) ENV. DET (I-HQ) adjustment. (INFORMATION, PRESET IN THE TEST MODE #4)
4) Video head REC current adjustment. (VI. ELECTRICAL ADJUSTMENT Steps 5 & 6)

4-13. REMOVAL OF THE POWER SUPPLY PCB

1) Remove the BOTTOM COVER (refer to step 1-2 on page 7).
2) Disconnect the P2 connector on the POWER SUPPLY PCB as shown in Fig. 4-26.

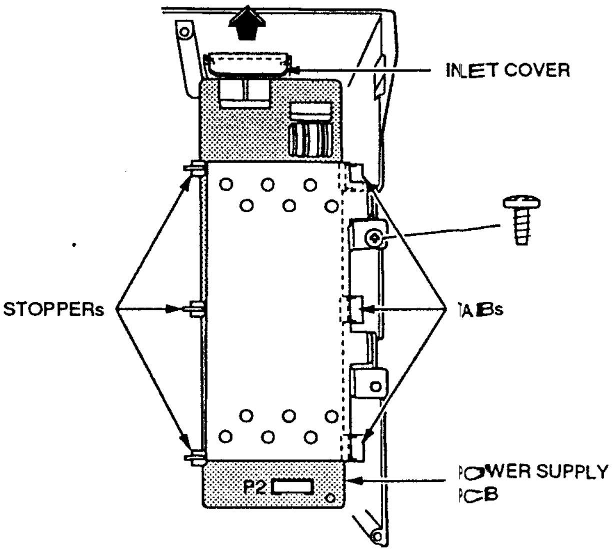


Fig. 4-26

3) Remove the shield cover retaining screw.
4) While pressing the tabs located at the bottom side in the direction of the arrow, remove the INLET COVER by pulling it up.

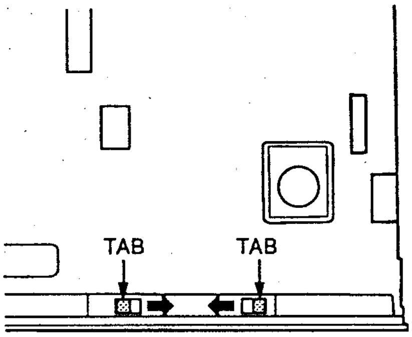


Fig. 4-27

5) While releasing the three tabs, pull up the right side of the POWER SUPPLY PCB carafully then remove the POWER SUPPLY PCB from the chassis as shown in Fig. 4-26.
6) Proceed in the reverse order for installation.

4-14. REMOVAL OF THE MAIN PCB

4-14-1.Removal of the OPERATION PCB

1) Remove the FRONT PANEL BLOCK (refer to step 1-3 on page 7).
2) While releasing the three tabs, pull out the upper side of the OPERATION PCB and angling it at a 45° angle as shown in Fig. 4-28.

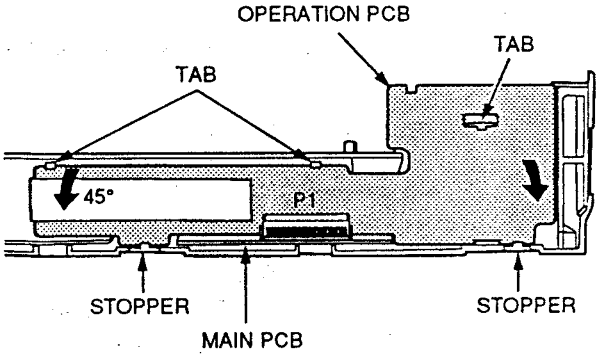


Fig. 4-28

3) Carefully disconnect the P1 connector which joins the OPERATION PCB and MAIN PCB by pulling the OPERATION PCB outward in the 45° angle direction.
4) Proceed in the reverse order for installation.

4-14-2.Removal of the MAIN PCB

1) Remove the MECHANISM BLOCK (refer to 4-1 on page 11).
2) Disconnect the P2 connector on the POWER SUPPLY PCB and P404 connector on the TR (B) PCB.
3) Lift up the REAR JACK PANEL by pressing the two stoppers in the direction of the arrows as shown in Fig. 4-29.

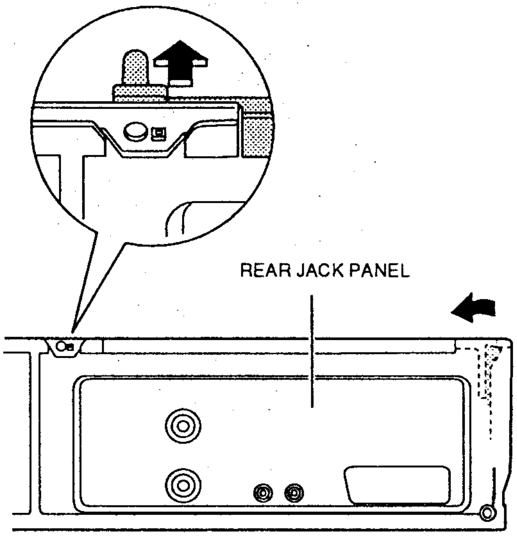


Fig. 4-29

4) Remove the MAIN PCB retaining screw, then carefully remove the MAIN PCB from the chassis while releasing the four tabs as shown in Fig. 4-30.

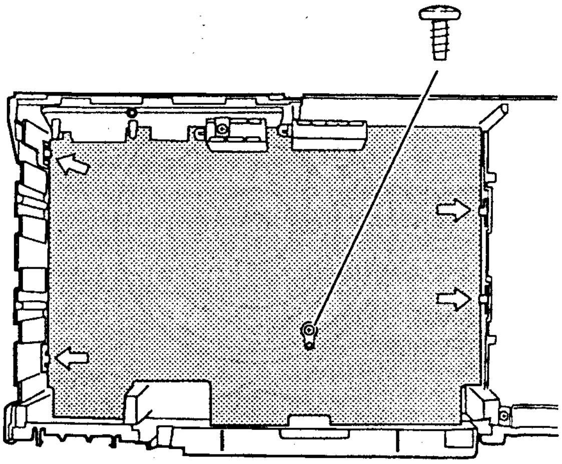


Fig. 4-30

V. MECHANICAL ADJUSTMENT

5-1. BACK TENSION ADJUSTMENT

1) Prepare a video cassette tape which you no longer need. Remove both tape reels and the tape protection cover from the cassette tape. Next, cover the video cassette's left and right detection holes with black adhesive tape.
2) Engage the playback mode using with a tapeless tape.
3) Confirm the distance between the three marks (lines) on the TENSION ARM and the Ⓐ mark on the MECHA. CHASSIS so that the Ⓐ mark aligns with the center line on the TENSION ARM as shown in Fig. 5-1.
4) If the result is not satisfactory, eject the tape and adjust the TENSION ADJUST repeatedly until a satisfactory result is achieved.

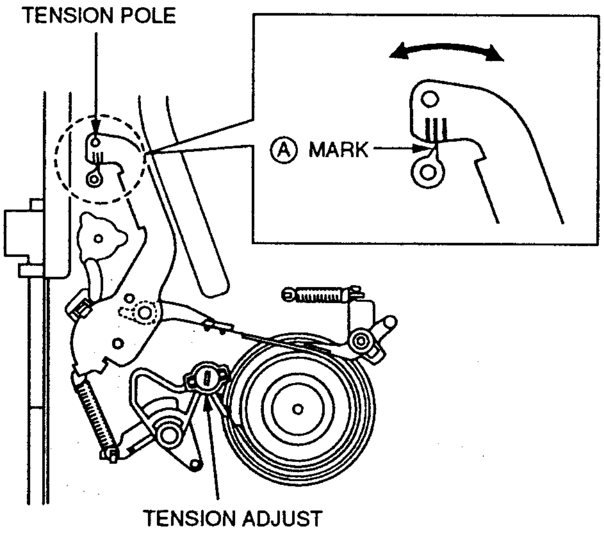


Fig. 5-1

5-2. TAPE TRANSPORT ADJUSTMENTS

NOTE : The following adjustments are required only when an irregularity is found, since these adjustments are precisely set at the factory.

5-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLK, until the edge of the tape barely touches the lower part of the TAKE UP TAPE GUIDE, without any curl or wrinkle.

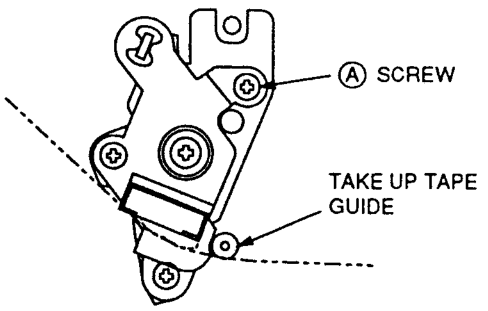


Fig. 5-2

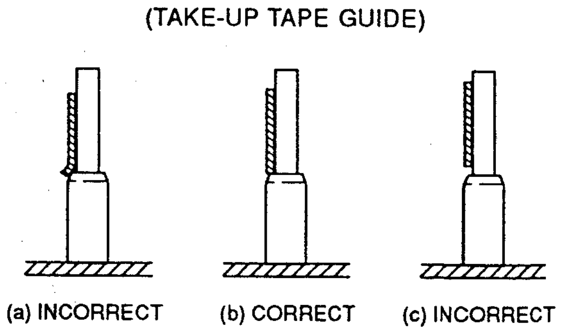


Fig. 5-3

3) Once the Ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 5-3. A/C HEAD POSITION ADJUSTMENT.)

5-2-2. Tape curl adjustment at the SUPPLY TAPE GUIDE

Confirm that the lower edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE, without any curl or wrinkle as shown in Fig. 5-4a. If necessary, bend the neck part of the TENSION ARM in the Ⓐ or Ⓑ direction slightly until a satisfactory result is achieved.

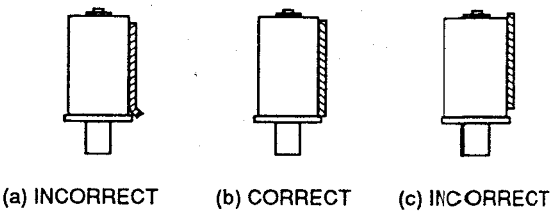


Fig. 5-4a

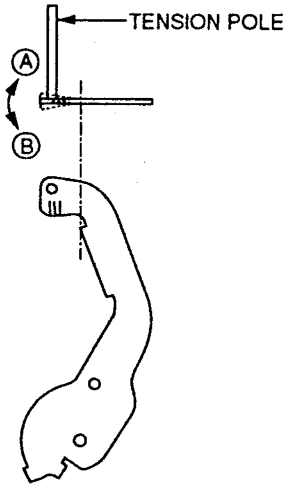


Fig. 5-4b

5-2-3. REVIEW ARM height adjustment

1) Play back the last part of an E-240 (T-160) tape and set the unit to the REVIEW mode by pressing the REW button. (Remove the tape protection cover to make the adjustment easier.)

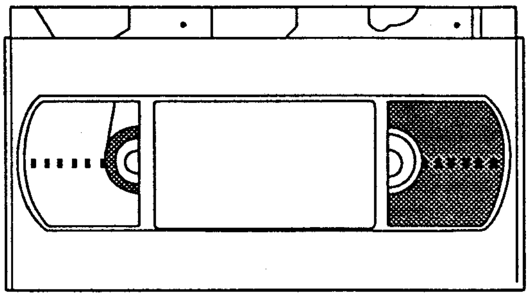


Fig. 5-5

2) Turn the REVIEW ARM height Ⓐ nut so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE, without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig. 5-6 to Fig. 5-8.

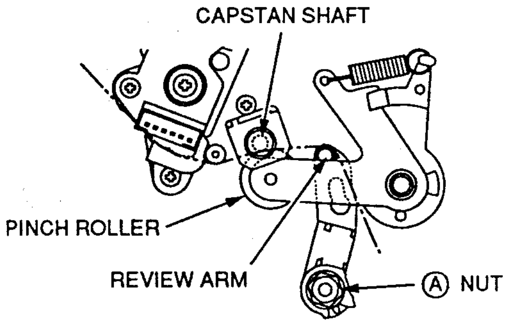
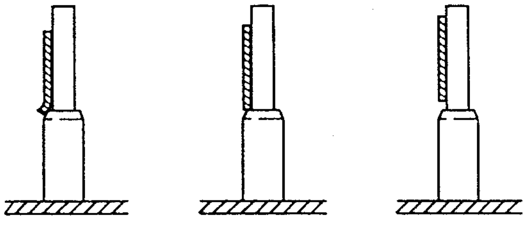


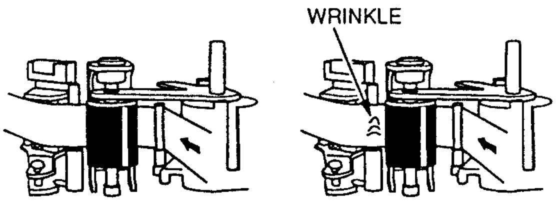
Fig. 5-6

(TAKE-UP TAPE GUIDE)



(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-7

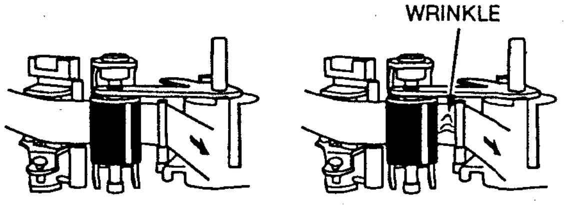


CORRECT INCORRECT

Fig. 5-8

3) Play back the last part of an E-240 (T-160) tape and this time set the unit to the CUE mode by pressing the F. FWD button.

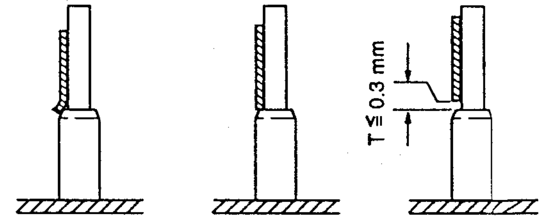
4) Confirm there is no curl or wrinkle near the REVIEW ARM's guide. If curl or wrinkle of the tape occurs, slightly turn the Ⓐ nut (Shown in Fig. 5-6) until it disappears.



CORRECT INCORRECT

Fig. 5-9

5) Set the unit to the REVIEW mode again. Then confirm that there is no curl or wrinkle near the TAKE-UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable.)



(a) INCORRECT (b) CORRECT (c) CORRECT

Fig. 5-10

NOTE :

1. If the results are not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Because an E-240 (T-160) tape can be damaged easily, due of its thinness, a pre-adjustment with an E-180 (T-120) tape is recommended.

5-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer to Fig. 5-11.)

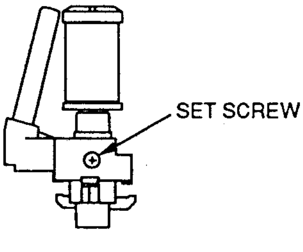


Fig. 5-11

2) Play back the reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope's CH-1 to the TP2 (ENVE) on the PRE AMP PCB and CH-2 to the TP1 (V-SWP) for triggering.
4) Turn the LOADING LEADER heads with a flat head(—) screw driver to obtain a flat RF envelope as the ideal envelope, as shown in Fig. 5-12.
5) After adjustment is completed, tighten the loading leader set screws.

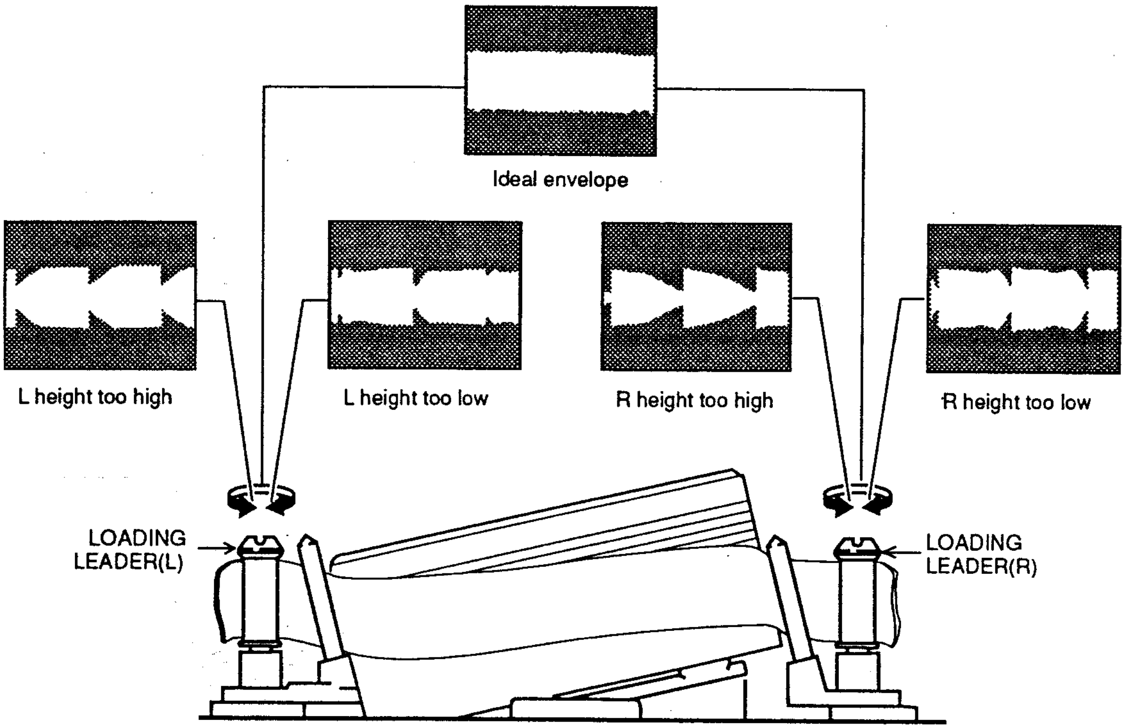

Ideal envelope
L height too high
L height too low
R height too high
R height too low
LOADING LEADER(L)
LOADING LEADER(R)

Fig. 5-12

5-3. A/C HEAD POSITION ADJUSTMENT

5-3-1. Azimuth adjustment

1) Connect an AC voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Adjust the Ⓑ screw to obtain the maximum audio output.

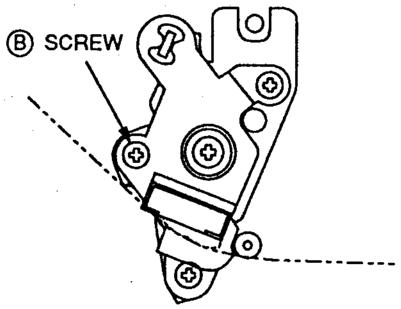


Fig. 5-13

5-3-2. Height adjustment

1) Play back test tape TF-526HH (AT-751788).
2) Connect an oscilloscope to the AUDIO OUT terminal on the rear panel .
3) Slightly turn the Ⓒ screw so that the output level is between 30 ~ 80 mVp-p.

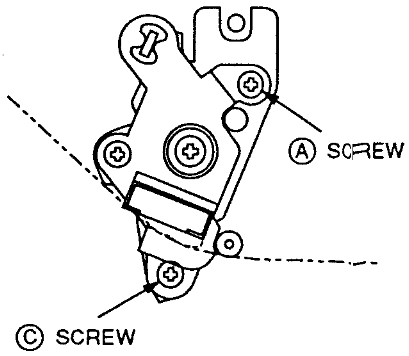

Ⓐ SCREW
Ⓒ SCREW

Fig. 5-14

4) Slightly turn the Ⓐ screw until the tape edge barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle as shown in Fig. 5-3.
5) Adjust the head azimuth again. (Turning the Ⓒ screw, or Ⓐ screw, will cause head azimuth mis-alignment. Refer to 5-3-1. Azimuth adjustment.)
6) Confirm whether the output level is still between 30 ~ 80 mVp-p or not. If the result is not satisfactory, repeat steps 3) to 5).

5-3-3. Phase adjustment

1) Connect an oscilloscope's CH-1 to the TP2 (ENVE) on the PRE AMP PCB and CH-2 to the TP1 (V-SWP) for triggering.
2) Play back reference tape TF-530RFS (AT-751775).
3) Press the ">" or "<" TRACKING button on the remote control unit until the "X" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig. 5-15.

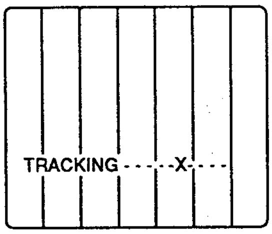


Fig. 5-15

4) Loosen the Ⓓ screw slightly so that the A/C HEAD BASE can be moved with reasonable tightness.

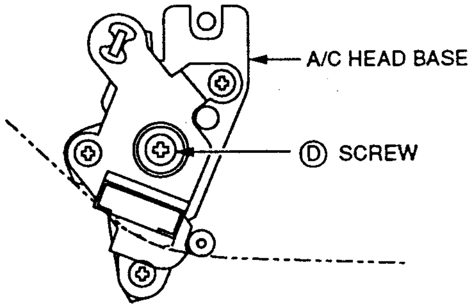


Fig. 5-16

5) Insert a philips type screwdriver into the A/C HEAD BASE and Ⓐ hole as shown in Fig. 5-17

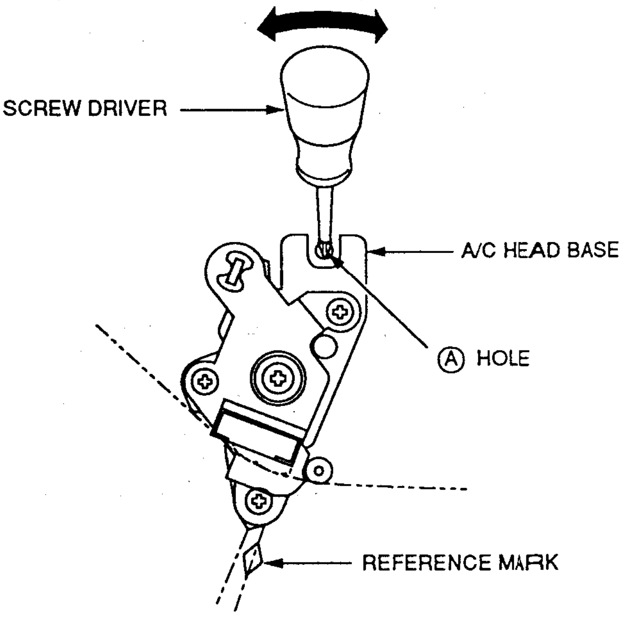


Fig. 5-17

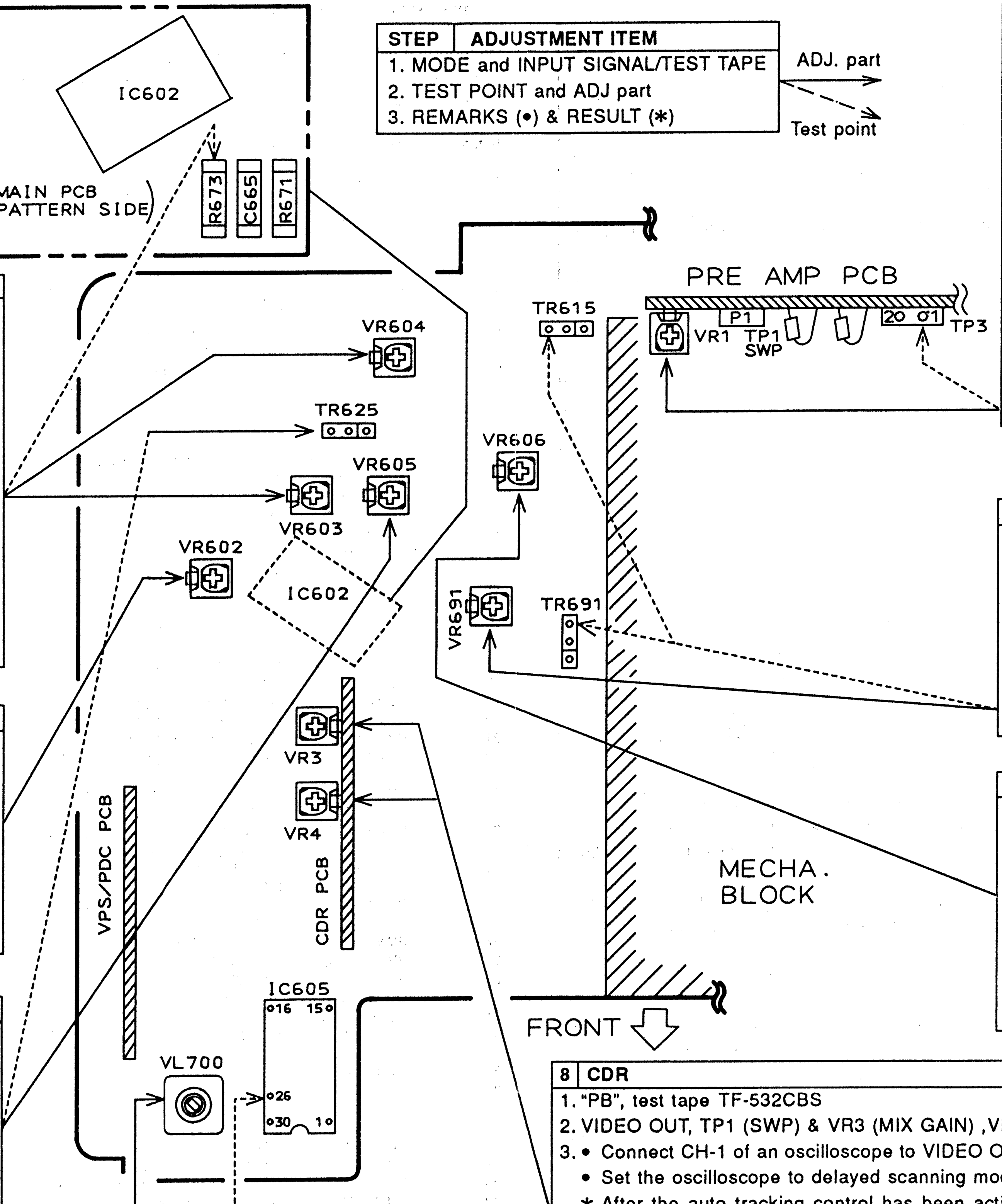
6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig. 5-17 to obtain the maximum RF output, then tighten the Ⓓ screw. Although there are a few points at which the RF output becomes maximum, the pointed head of the A/C HEAD BASE must be positioned to the left side of the reference mark (head drum direction).
7) Eject the tape and then re-insert it and play it back again. Confirm that the RF output is maximum after the auto tracking control has been activated. Next, press the "<" or ">" cursor button on the remote control unit alternately and confirm that the RF output is maximum at the tracking centre position. If the result is not satisfactory, repeat the adjustment steps 2) to 6). (This adjustment is very important as this affects the interchangeability of the recorded tapes.)

VI. ELECTRICAL ADJUSTMENT

Precautionary items prior to adjustments
1. The colour bar generator output should be 1.0 Vp-p.
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV).

The following test tape is required.

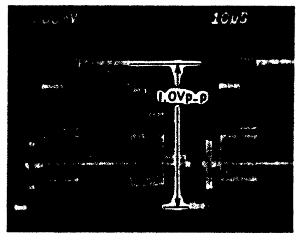
Test tape	Parts No.
TF-532CBS	AT-751360



STEP	ADJUSTMENT ITEM
1.	MODE and INPUT SIGNAL/TEST TAPE
2.	TEST POINT and ADJ part
3.	REMARKS (•) & RESULT (∗)

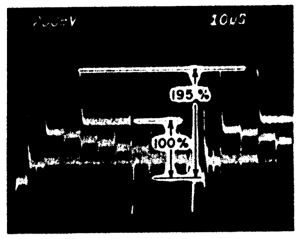
ADJ. part →
Test point - - →

1 VIDEO E-E LEVEL
1. "E-E" (STOP mode), PAL colour bar signal
2. VIDEO OUT & VR602 (E-E LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   ∗ 1.0 Vp-p

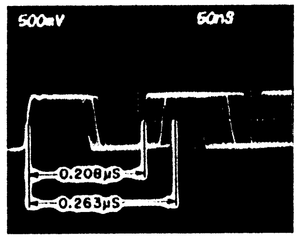


2 IMS AFC
1. "E-E", PAL colour bar signal
2. IC605 ㉖ pin & VL700
3. • Connect a digital DC voltmeter to the IC605 ㉖ pin.
   ∗ Adjust VL700 so that the meter registers 2.5 V.

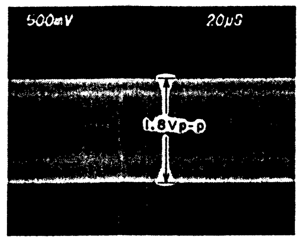
3 WHITE CLIP
1. "E-E", PAL colour bar signal
2. TR625 (EMITTER) & VR605 (WHITE CLIP)
3. • Connect an oscilloscope to the emitter of TR625.
   ∗ Adjust VR605 so that the white clip level is 195 % of the video level (the level from sync tip to white 100%).



4 CARRIER SET & DEVIATION
1. "E-E", Stair step signal
2. R673 & VR604 (CARRIER), VR603 (DEVIATION)
3. • Connect an oscilloscope to the lead of the R673 or IC602 ⑥ pin (REC FM OUT) on the reverse side of the MAIN PCB.
   ∗ Adjust VR604 and VR603 alternately until the result is satisfactory.
   ∗ VR604 (CARRIER) : 0.263 μs (3.8 MHz)
   ∗ VR603 (DEVIATION) : 0.208 μs (4.8 MHz)

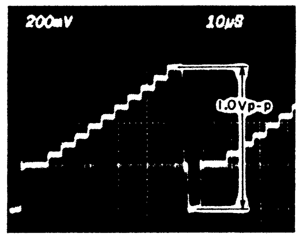


5 Y REC CURRENT
1. "REC" (SP), no signal input
2. TP3 (REC.I) & VR1 (REC-Y)
3. • Connect an oscilloscope to the TP3 ① pin on the PRE AMP PCB.
   ∗ Adjust VR1 so that the Y REC current is 1.8 Vp-p.

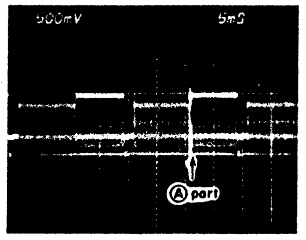


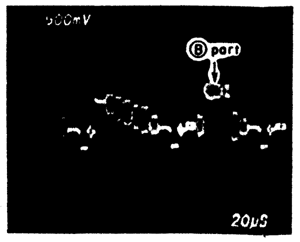
6 CHROMA REC CURRENT
1. "E-E", PAL colour bar signal
2. TR691 (E),TR615 (E) & VR691 (REC-CHROMA)
3. • Connect an oscilloscope to the TR615 emitter and read the peak to peak level of the REC FM Y signal then connect the oscilloscope to the TR691 emitter.
   ∗ Adjust VR691 on the MAIN PCB so that the burst signal level becomes 25 % of the Y signal level that was measured at the TR615 emitter.

7 VIDEO PB LEVEL
1. "REC" → "PB", stair step signal
2. VIDEO OUT & VR606 (PB LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   • Make a recording on a blank tape, then play it back.
   ∗ Adjust VR606 so that the PB level becomes 1.0 Vp-p.

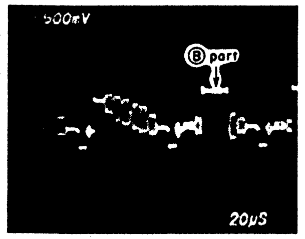


8 CDR
1. "PB", test tape TF-532CBS
2. VIDEO OUT, TP1 (SWP) & VR3 (MIX GAIN) ,VR4 (PHASE ADJ.)
3. • Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the TP1 on the PRE AMP PCB for triggering.
   • Set the oscilloscope to delayed scanning mode and observe the Ⓐ part (line non-correlated part).
   ∗ After the auto tracking control has been activated, adjust the VR3 and VR4 alternately so that the non-correlated chroma signal (Ⓑ part) is at its minimum level.





INCORRECT



CORRECT

VII. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of earch part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20x03STL CMT
4	ZS-536488	BID20x08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Block

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A)　[S] : SAA (Australia)
[B] : BEAB (England)　[U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe)　[V] : VDE (Germany)
[J] : JPN (Japan)　[Y] : Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ (✱) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

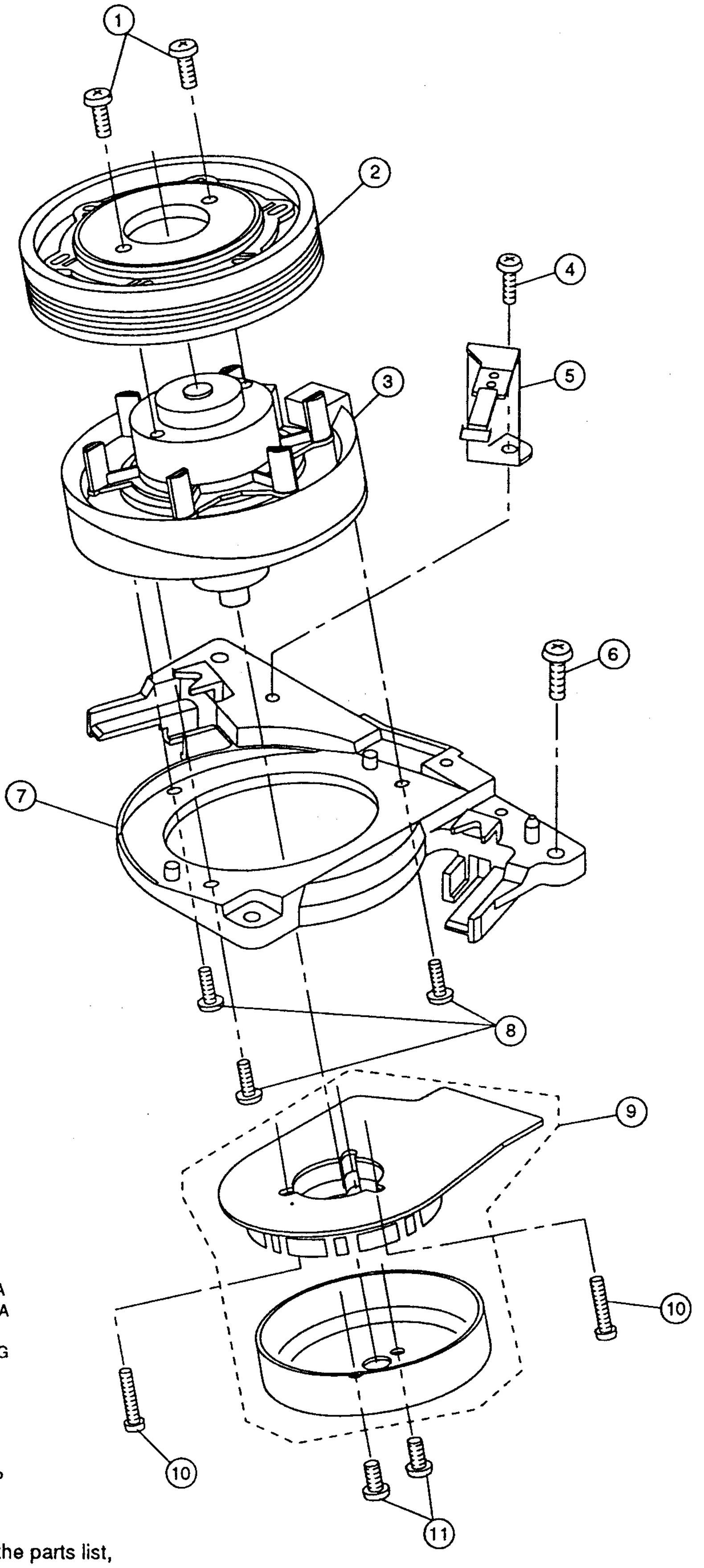
⚠ (✱) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCUTITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	AV-416971M	REMOCON RC-W400E [G405EA/EDG]
2	AV-422459N	REMOCON RC-W474G [EOG-V]
3	AV-422456N	REMOCON RC-W564E [EK]
4	AV-422455N	REMOCON RC-W655E [ES,EM,G411EOH,G511EDG]
5	AV-422457N	REMOCON RC-W675E [EO,G415EOH]
6	AV-425517N	REMOCON RC-W675G [EOG]
7	AV-426106N	REMOCON RC-W685E [G415EA]
8	BB-421845N01	MECHA DECK G405EA
9	BL-424913N00	ARM LOADING BLK G204EA
10	BL-420054N	ARM PINCH ROLLER PART
11	BM-421746N	MOTOR PART
12	BM-419269N	MOTOR SCV-0602A
13	BM-419324J1	MOTOR SDV-0302A
14	✱BT-425397N	TRANS POW V1182 EK [EXCEPT EM,EOG-V]
15	✱BT-422116N	TRANS POW V1184 EM [EM]
16	✱BT-422117N	TRANS POW V1190 EOG [EOG-V]
17	BV-424919N00	CASSETTE LOAD BLK G204EA
18	BV-424907N00	HOLDER GEAR BLK G405EA
19	BV-424914N00	LEADER(S) BLK G204EA
20	BV-424915N00	LEADER(T) BLK G204EA
21	BV-V1182A410C	LOWER DRUM BLK G415EA
22	BV-425222J	RF CONVER. YAA21-1001G G/K EDG [EDG]
23	BV-403410J	RF CONVERTER MDLK6B733A EK [ES,EK]
24	BV-403409J	RF CONVERTER MDLK6D755A EO [EO,EOH,EOG,EOG-V]
25	BV-387611J1	RF CONVERTER YAA21-0808G EV [EM]
26	BV-387610J1	RF CONVERTER YAA21-0809G EA [EA]
27	BV-V1182A420B	UPPER DRUM BLK G415EA
28	BV-422132J	VIF UNIT AX EDG
29	BV-403236J1	VIF UNIT KX EA
30	BV-403238J1	VIF UNIT KX EK
31	BV-403239J1	VIF UNIT KX EM
32	BV-403241J1	VIF UNIT KX EOG [EO]
33	BV-403240J2	VIF UNIT KX EOH
34	BV-403242J1	VIF UNIT KX ES
35	BV-416729J	VIF UNIT KX-TEK EOG [EOG,EOG-V]
36	EC-416655J	C DBL.LAYER T05 FM0H473Z 5.5DC
37	ED-390012J	D LED GL4800 INFRARED
38	ED-422251J	D LED GL528VTB INFRARED T05
39	ED-422243N	D SCHOT.AK03WK T05 [EM,EOG-V]
40	ED-418625J	D SCHOTTKY EK14LF-G1 S12 [EXCEPT EOG-V]
41	ED-422244J	D SCHOTTKY RK34LF-B2 S12 [EOG-V]
42	ED-418624J	D SCHOTTKY RK39LF-B2 S12 [EXCEPT EOG-V]
43	ED-422462J	D SCHOTTKY RK49 015-302 S15 [EOG-V]
44	ED-419028J	D SILICON CHIP MA152WK TXT08E
45	✱ED-418976N	D SILICON EG01CW T05 1000/0.5A
46	ED-425207J	D SILICON ERA18-02 T26
47	ED-307572	D SILICON H 1SS131
48	✱ED-511907	D SILICON 1N4002 100/1.0A
49	✱ED-422125J	D SILICON 1N4006 T26 800/1.0A
50	ED-425400J	D ZENER H HZS12A3L
51	ED-402215J	D ZENER H HZS15-1 [EOH,EOG,EOG-V,G511EDG]
52	ED-402181J	D ZENER H HZS3A1
53	ED-422161J	D ZENER H HZS3B3 T26
54	✱ED-397233J	D ZENER H HZS5C3
55	ED-387919J	D ZENER H HZS6A1L
56	ED-396059J	D ZENER H HZS6B2 [EXCEPT EK,G405EA/EDG]
57	ED-400172J	D ZENER H HZS7A3L
58	ED-397614J	D ZENER H HZS9A3L T26
59	ED-405247J	D ZENER H MTZJ2.7A T26
60	✱ED-422420J	D ZENER H MTZJ20C T26
61	ED-422519J	D ZENER H MTZJ4.3B T26
62	ED-405604J	D ZENER H MTZJ4.3C T26
63	ED-404220J	D ZENER H MTZJ9.1B T26
64	EE-412395J	TV TUNER ENV-578C9F1 EOH [EOH]
65	EE-416854J	TV TUNER TEKE1-042A EO [G405EDG]
66	EE-416524J1	TV TUNER TEKE4-034B EOG [EOG,EOG-V,G511EDG]
67	EE-387607J1	TV TUNER TERB1-008B EK [EK]
68	EE-387604J3	TV TUNER TERE1-007D EOG [EO]
69	EE-387603J1	TV TUNER TERE1-019B EO [ES]
70	EE-419189J	TV TUNER VTSH6AZ01 EA [EA]
71	EE-405638J	TV TUNER VTSS6CZ EM [EM]
72	✱EF-601964	FUSE SET T 250V 1.60A
73	EH-373916	FILTER CE SAF36.9MZ70Z [EA]
74	EH-376120	FILTER CE SAF38.9MW70Z [ES]
75	EH-733563J	FILTER CE SAF38.9MZC70Z
76	EH-730625J	FILTER CE SAF38.9MZW70Z [EXCEPT EA,ES,EK]
77	EH-373917	FILTER CE SAF39.5MZ70Z [EK]
78	EH-373920	FILTER CE SFE5.5MB [ECEPT ES,EK]
79	EH-373921	FILTER CE SFE6.0MB [ES,EK]
80	EH-412432J	FILTER CE SFSH6.5MDB 6.500MHZ
81	EH-368827	FILTER CE SFS5.5MD 5.500MHZ
82	EH-729986J	FILTER CE TPS5.5MB2 [EM]
83	EH-368948	FILTER CE TPS5.5MW 5.5000MHZ [EXCEPT EM,ES,EK]
84	EH-373919	FILTER CE TPS6.0MB [ES,EK]
85	EH-376338	FILTER CE TPS6.5MB
86	EI-416607J	IC AN3386NK-A
87	EI-422151J	IC AN3558FBS
88	EI-386468J	IC BA3308 [EXCEPT EK,G405EA/EDG]
89	EI-366892	IC BA7025L [EM,EDG]
90	EI-386393J	IC BA7605N
91	EI-414885J	IC CF72306
92	EI-414884J	IC CF72307
93	EI-422365J	IC CXA1645M
94	EI-425537J	IC LA6358NM
95	EI-414861J	IC LA7285
96	EI-403233J	IC LB1641
97	EI-419157J	IC LC74760-9044
98	EI-394856J	IC LC8992
99	EI-389622J	IC L5631
100	EI-422375J	IC MC14013BFR2 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
101	EI-410451J	IC MC14053BFR2 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
102	EI-418647J	IC MC14066BFR2 [EXCEPT EOH[Y2],EOG,EOG-V]

Ref. No.	Part No.	Description
103	EI-418865J1	IC M37770M4H-162FP AFXSYP2
104	EI-422218J	IC M51494L
105	EI-368809	IC M51496P
106	* EI-418723J	IC NJM4558DX
107	EI-400756J	IC NJM4558L-B
108	* EI-416620J	IC NJM7809FA
109	EI-422090J	IC SAA5233P
110	EI-422382J	IC SAA5233T
111	EI-422128N	IC TA76431S T05
112	EI-310036	IC TC4066BP
113	EI-418861J1	IC UPD75217GF-645-3BE ABXOPP2 [EXCEPT EOG-V]
114	EI-418861J2	IC UPD75217GF-652-3BE ABXOPP3 [EOG-V]
115	EI-418863J2	IC UPD78014CW-072AXVPT3
116	EI-410125J	IC V53C464AP-80
117	EI-416691J	IC XC61AC3002TH T05
118	EI-425667J	IC 24LC01B/SN
119	EI-425666J	IC 24LC08B/SN
120	EI-368829	OSC CE CSB512P
121	EI-414889J	OSC CE CST10.0MTW-TF01 T05
122	EI-418824J	OSC CE W/C FCR4.19MC5 4.190MHZ
123	EI-425240J	OSC X'TAL APS-1011A 16.000MHZ
124	EI-416872J	OSC X'TAL APS1004A 17.734475MH
125	EI-422092J	OSC X'TAL APS1008 3RD27.000MHZ
126	EI-422503J	OSC X'TAL APS1010B 13.875MHZ
127	EI-368825M	OSC X'TAL C-002RX 32.768KHZ
128	EI-422510J	OSC X'TAL HC-49/U 4433.619KHZ
129	EJ-422348J	SOCKET TRC-X30X-A2 30P
130	EM-422143J	IND FL FV642G CHARACTER
131	* ER-408829J	R FUSE V T05 RF25SCVTP1/4WR11K
132	* ER-397385J	R FUSE V T05 RF25SCVTP1/4WR20K
133	* ER-418648J	R FUSE V T05 RF25SCVTP1/4WR24K
134	* ER-408963J	R FUSE V T05 RF25SCVTP1/4WR33K
135	* ER-400729J	R FUSE V T05 RF25SCVTP1/4WR47K
136	* ER-410380J	R FUSE V T05 RF25SCVTP1/4WR91K
137	ES-422247J	SW MICRO MPU10181MLB0 [EXCEPT ES,EM,EDG]
138	ES-419326J	SW MODE SELECT MMS00201ZMB0
139	ES-408404J	SW TACT EVQ 235 07K T05
140	ES-411687J	SW TACT EVQ-PAE05R
141	ES-396610J	SW TACT SOR-122HS T05
142	ET-422349J	DETECTOR TFMT5380
143	* ET-422113J	PHOTO COUPLER PS2561-1-V
144	* ET-422464J	TR C.2SD2118 Q,R,S FPTLT16E
145	ET-731437J	TR CHIP DTC114EK [EO,EOG,EOG-V]
146	ET-421977J	TR CHIP UN2113 TXT08E [EXCEPT EA,ES,EM,G511EDG]
147	ET-421999J	TR CHIP UN221D TXT08E
148	ET-422003J	TR CHIP UN221L TXT08E
149	ET-421989J	TR CHIP UN2210 R,S TXT08E [EOH,EOG,EOG-V]
150	ET-421990J	TR CHIP UN2211 TXT08E
151	ET-414836J	TR CHIP UN2213 TXT08E [EXCEPT ES,G511EDG]
152	ET-421993J	TR CHIP UN2215 R,S TXT08E
153	ET-370818	TR CHIP 2SA1235
154	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EA,EM]
155	ET-725820J	TR CHIP 2SC2735J
156	ET-370819	TR CHIP 2SC3052
157	ET-416933J	TR CHIP 2SD601A R,S TXT08E
158	ET-418740J	TR DTA115TL T05
159	ET-360399	TR DTC114TS
160	ET-373391	TR DTC143ZS [EK,EOG,EOG-V,G415EOH[Y1]]
161	ET-390010J	TR PHOTO PT4800
162	ET-390009J	TR PHOTO PT493F
163	ET-421936J	TR UN411F T05 [EXCEPT EK,G405EA/EDG]
164	ET-419707J	TR UN4110 R,S T05
165	ET-419708J	TR UN4111 T05 [EXCEPT EA,ES,EK]
166	ET-419710J	TR UN4113 T05 [EXCEPT EOH[Y2],EOG,EOG-V]
167	ET-422033J	TR UN4116 T05 R,S
168	ET-364040	TR UN421D
169	ET-421952J	TR UN421L T05
170	ET-422031J	TR UN4210 R,S T05
171	ET-421939J	TR UN4211 T05
172	ET-421941J	TR UN4213 T05 [EXCEPT EOH[Y2],EOG,EOG-V]
173	ET-421945J	TR UN4216 R,S T05 [EXCEPT EA,ES,EK]
174	ET-353899	TR 2SA1317 S,T,U
175	* ET-404498J	TR 2SB1306 Q,R T05
176	ET-422154J	TR 2SB1426 Q,R T05
177	ET-419706J	TR 2SB1434 R,S T05
178	ET-414816J	TR 2SC2668 Y T05 [EXCEPT EOG,EOG-V,G511EDG]
179	ET-397160J	TR 2SC3330 R,S,T,U,V [EOG,EOG-V,G511EDG]
180	* ET-422118J	TR 2SC4304 O,Y
181	* ET-422129J	TR 2SD2132 U,V T05
182	* ET-422511J	TR 2SD2375 P
183	EW-421820J	CORD FFC BD P1.25 L=100 19P
184	EW-421819J	CORD FFC BD P1.25 L=90 9P
185	EX-405691J	THERMISTOR NTH5D332KA
186	* EX-412521J	THERMISTOR 911P83E101 NH07 T05
187	HE-422168J	HEAD E HVFHF0032A
188	HR-416732J	HEAD COMBO HVMZA1161A
189	MB-420053N	BELT CAPSTAN
190	MI-420023N	ARM IDLER PART
191	MI-420145N	DISK CLUCH(2)PART
192	MI-420037N	DISK COUPLING
193	ML-420033N	ARM COUPLING
194	ML-420170N	ARM LID OPENER
195	ML-420097N	ARM LOADING BRAKE
196	ML-420068N	ARM REVIEW PART
197	ML-420006N	ARM TENSION PART
198	ML-420126N	CAPSTAN BRAKE PART
199	ML-420099N	LEVER M BRAKE
200	ML-420061N	LEVER PINCH
201	ML-420133N	LEVER REC-S
202	ML-420416N	LEVER TENSION(1)PART
203	ML-420138N	LEVER WINDER PART (SG)
204	ML-420086N	MAIN BRAKE(S)PART
205	ML-420089N	MAIN BRAKE(T)PART
206	ML-420092N	REVIEW BRAKE PART
207	ML-420110N	SLIDER PINCH
208	ML-420100N	SLIDER TRIGGER
209	MR-420109N	HOLDER THRUST WORM
210	MR-420106N	PULLEY TRIGGER
211	MR-420022N	ROLLER IMPEDANCE
212	MT-424632N	DISK(2) PART
213	MZ-420064N	GEAR CAM HELICAL
214	MZ-420122N	GEAR CAM MAIN
215	MZ-420328N	GEAR CAM PINCH(2)
216	MZ-420035N	GEAR COUPLING
217	MZ-420124N	GEAR FRONT LOADING
218	MZ-420067N	GEAR PINCH
219	MZ-424917N00	GEAR TOGGLE (S) BLK G2 04EA
220	MZ-424916N00	GEAR TOGGLE (T) BLK G2 04EA
221	MZ-420123N	GEAR WORM WHEEL
222	MZ-420132N	PRISM LED
223	MZ-420016N	TENSION BAND PART
224	ZG-420036N	SP PUSH COUPLING
225	ZG-420105N	SP TRIGGER

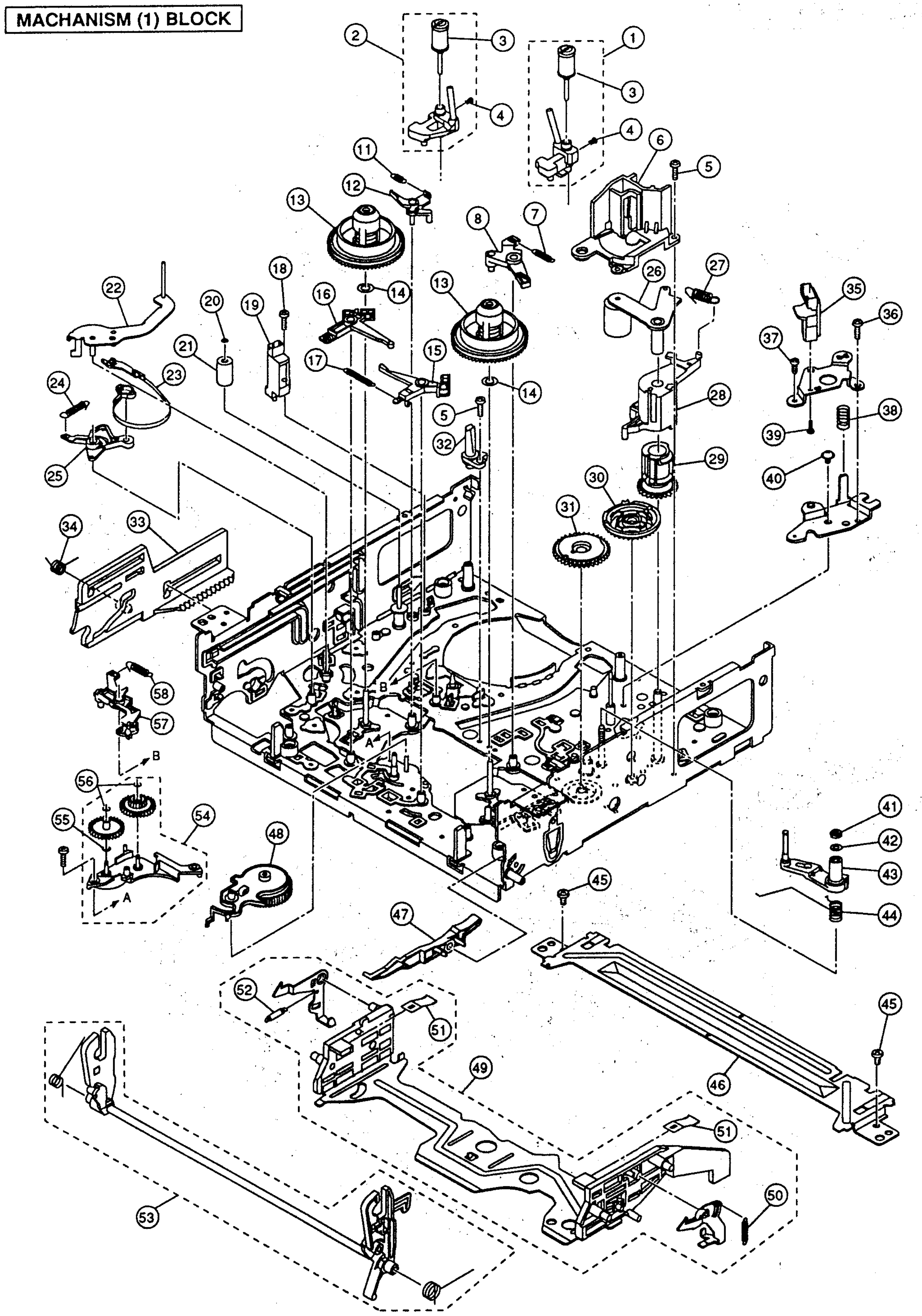


2. HEAD DRUM BLOCK

Ref. No.	Part No.	Description
1	ZS-321298	BID30X08STL CMT
2	BV-V1182A420B	UPPER DRUM BLK G415EA
3	BV-V1182A410C	LOWER DRUM BLK G415EA
4	ZS-358936	ST BID30X06STL CMT
5	VT-418700J	EARTH BRUSH (2) PART AG
6	ZS-336714	ST BID30X12STL CMT
7	MA-424961J	CHASSIS DRUM(2)
8	ZS-563444	BID26X08STL CMT
9	BM-419324J1	MOTOR SDV-0302A
10	ZS-467796	PAN26X12STL CMT
11	ZS-425694J	PAN30X06STL CMT S-GRIP

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MACHANISM (1) BLOCK



3. MACHANISM (1) BLOCK

Ref. No.	Part No.	Description
1	BV-424915N00	LEADER(T) BLK G204EA
2	BV-424914N00	LEADER(S) BLK G204EA
3	VT-387394J1	GUIDE ROLLER D8 PART
4	ZS-418616J	PAN20X2.8STL CMT PS1 LEADER
5	ZS-383761J	ST BID26X06STL CMT
6	MZ-420065N	HOLDER PINCH
7	ZG-420095N	SP PULL REVIEW BRAKE
8	ML-420092N	REVIEW BRAKE PART
11	ZG-420098N	SP PULL LOADING BRAKE
12	ML-420097N	ARM LOADING BRAKE
13	MT-424632N	DISK(2) PART
14	ZW-424667N	REEL WASHER (SG)
15	ML-420089N	MAIN BRAKE(T)PART
16	ML-420086N	MAIN BRAKE(S)PART
17	ZG-420091N	SP PULL MAIN BRAKE
18	ZS-403887J	PT BID26X12STL CMT
19	HE-422168J	HEAD E HVFHF0032A
20	ZW-395919J	SLIT W16X035X025 PSL
21	MR-420022N	ROLLER IMPEDANCE
22	ML-420006N	ARM TENSION PART
23	MZ-420016N	TENSION BAND PART
24	ZG-420015N	SP PULL TENSION(1)
25	ML-420416N	LEVER TENSION(1)PART
26	BL-420054N	ARM PINCH ROLLER PART
27	ZG-420062N	SP PULL PINCH
28	ML-420061N	LEVER PINCH
29	MZ-420064N	GEAR CAM HELICAL
30	MZ-420328N	GEAR CAM PINCH(2)
31	MZ-420067N	GEAR PINCH
32	MZ-420132N	PRISM LED
33	ML-420168N	SLIDER FRONT LOADING
34	ZG-420169N	SP TORSION SLIDER
35	HR-416732J	HEAD COMBO HVMZA1161A
36	ZS-550708	PAN26X08STL NI3
37	ZS-422170J	PAN26X07STL CMT CP
38	ZG-420075N	SP PUSH A/C
39	ZS-418480J	PAN20X2.2STL BZN PS1
40	ZS-362533	ST PAN30X05STL CMT C080
41	ZW-350839	N30 NYLON
42	ZW-324417	PW31X060X050PSL
43	ML-420068N	ARM REVIEW PART
44	ZG-420071N	SP TORSION REVIEW
45	ZS-358936	ST BID30X06STL CMT
46	MZ-420172N	PLATE UPPER
47	ML-420170N	ARM LID OPENER
48	MI-420023N	ARM IDLER PART
49	BV-424919N00	CASSETTE LOAD BLK G204EA
50	ZG-420167N	SP PULL DUMPER(T)
51	ZG-420162N	SP PLATE UPPER
52	ZG-420166N	SP PULL DUMPER(S)
53	BL-424913N00	ARM LOADING BLK G204EA
54	BV-424907N00	HOLDER GEAR BLK G405EA
55	ZW-418619J	PW16X035X025PSL
56	ZW-418855J	SLIT W1.25X040X025PSL
57	ML-420138N	LEVER WINDER PART (SG)
58	ZG-420144N	SP PULL WINDER (SG)
59	BB-421845N01	MECHA DECK G405EA

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

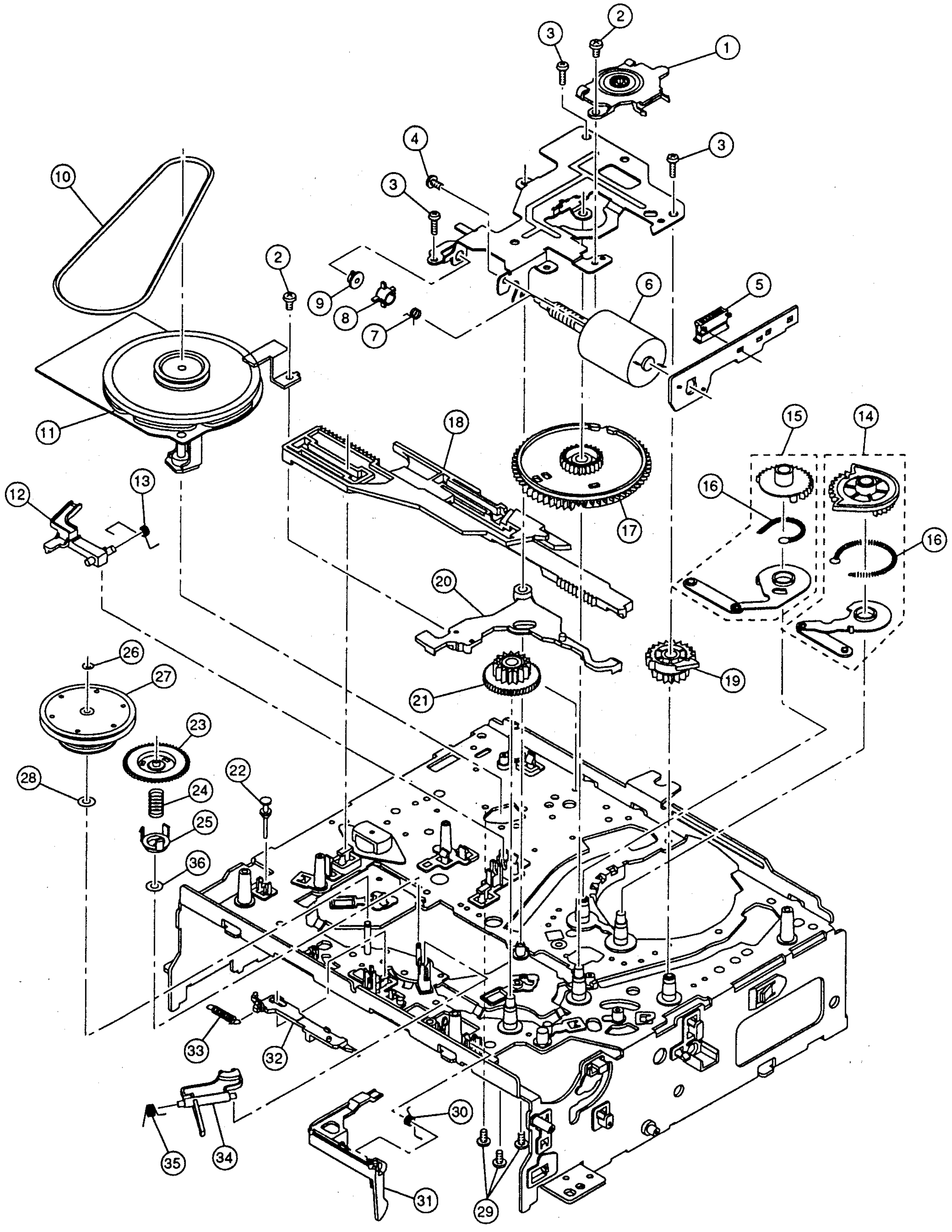
4. MACHANISM (2) BLOCK

Ref. No.	Part No.	Description
1	ES-419326J	SW MODE SELECT MMS00201ZMB0
2	ZS-358936	ST BID30X06STL CMT
3	ZS-389950J	PT BID26X10STL CMT
4	ZS-425981	BID30X03STL CMT
5	EJ-422169J	SOCKET TKC-M07X-A1 7P
6	BM-421746N	MOTOR PART
7	ZG-420105N	SP TRIGGER
8	MR-420106N	PULLEY TRIGGER
9	MR-420109N	HOLDER THRUST WORM
10	MB-420053N	BELT CAPSTAN
11	BM-419269N	MOTOR SCV-0602A
12	ML-420126N	CAPSTAN BRAKE PART
13	ZG-420129N	SP TORSION C.B
14	MZ-424917N00	GEAR TOGGLE (S) BLK G204EA
15	MZ-424916N00	GEAR TOGGLE (T) BLK G204EA
16	ZG-420117N	SP PULL TOGGLE
17	MZ-420122N	GEAR CAM MAIN
18	ML-420110N	SLIDER PINCH
19	MZ-420124N	GEAR FRONT LOADING
20	ML-420099N	LEVER M BRAKE
21	MZ-420123N	GEAR WORM WHEEL
22	MZ-420135N	SLIDE S-SW
23	MZ-420035N	GEAR COUPLING
24	ZG-420036N	SP PUSH COUPLING
25	MI-420037N	DISK COUPLING
26	ZW-418816J	SLIT W21X050X050PSL
27	MI-420145N	DISK CLUCH(2)PART
28	ZW-389923J	PW26X060X050PSL
29	ZS-432843	PAN26X04STL CMT
30	ZG-420134N	SP TORSION REC-S
31	ML-420133N	LEVER REC-S
32	ML-420100N	SLIDER TRIGGER
33	ZG-420101N	SP PULL TRIGGER
34	ML-420033N	ARM COUPLING
35	ZG-420034N	SP TORSION COUPLING
36	ZW-321317	PW21X040X050PSL

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MACHANISM (2) BLOCK



5. P.C. BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-V1188A600A	PC(#) MAIN BLK G405EA
1-B	BA-V1188A600D	PC(#) MAIN BLK G405EDG
1-C	BA-V1188A600C	PC(#) MAIN BLK G411EM
1-D	BA-V1188Q600E	FR PC(#) MAIN BLK G411EOH(Y1)/FR
1-E	BA-V1188A600B	PC(#) MAIN BLK G411ES
1-F	BA-V1188A600M	PC(#) MAIN BLK G415EA
1-G	BA-V1188Q600F	FR PC(#) MAIN BLK G415EK/FR
1-H	BA-V1188Q600G	FR PC(#) MAIN BLK G415EO/FR
1-I	BA-V1188A600H	PC(#) MAIN BLK G415EOH(E)
1-J	BA-V1188Q600K	FR PC(#) MAIN BLK G415EOH(Y1)/FR
1-K	BA-V1188Q600J	FR PC(#) MAIN BLK G415EOH(Y2)/FR
1-L	BA-V1188Q605A	FR PC(#) MAIN BLK G417EOG/FR
1-M	BA-V1188Q600L	FR PC(#) MAIN BLK G418EOG-V/FR
1-N	BA-V1188A605C	PC(#) MAIN BLK G511EDG
2-A	BA-V1184A610B	PC PRE 3/4 BLK G405EA [EK,G405EA/EDG]
2-B	BA-V1184A610C	PC PRE 3/4 BLK G415EOH [EXCEPT EK,G405EA/EDG]
3-A	BA-V1184A630C	PC OPERATION BLK G415EOH [EXCEPT EM,EOG-V]
3-B	BA-V1184A630J	PC OPERATION BLK G411EM [EM]
3-C	BA-V1184Q630H	FR PC OPERATION BLK G418EOG-V/FR [EOG-V]
4-A	BA-V1184S500A	SG PC POWER BLK G305EA [EXCEPT EM,EOG,EOG-V]
4-B	BA-V1184S500D	SG PC POWER BLK G204EM [EM]
4-C	BA-V1184S500C	SG PC POWER BLK G212EOG [EOG]
4-D	BA-V1184S500H	SG PC POWER BLK G717EOG-D [EOG-V]
5-A	BA-V1184Q750C	FR PC(#) DEC BLK G415EOH(Y2)/FR [EOH[Y2]]
5-B	BA-V1184Q750D	FR PC(#) DEC BLK G418EOG-V/FR [EOG,EOG-V]

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C. BOARDS.

- MAIN P.C. BOARD
- SAT P.C. BOARD (EK, EO, EOH (E)/(Y1))
- TR (A) P.C. BOARD
- TR (B) P.C. BOARD
- VIF UNIT

PC (#) DEC BLK CONSISTS OF FOLLOWING P.C. BOARDS. (EOH (Y2), EOG, EOG-V)

- DECODER (A) P.C. BOARD
- DECODER (B) P.C. BOARD

6. MAIN P.C. BOARD

Ref. No.	Part No.	Description
C433	EC-416655J	C DBL.LAYER T05 FM0H473Z 5.5DC
D10	ED-307572	D SILICON H 1SS131
D11	ED-307572	D SILICON H 1SS131
D20	ED-307572	D SILICON H 1SS131 [EXCEPT EK]
D21	ED-307572	D SILICON H 1SS131 [EXCEPT EK]
D30	ED-387919J	D ZENER H HZS6A1L
D31	ED-307572	D SILICON H 1SS131 [EOH,EOG,EOG-V,G511EDG]
D32	ED-402215J	D ZENER H HZS15-1 [EOH,EOG,EOG-V,G511EDG]
D60	ED-307572	D SILICON H 1SS131 [EO,EOG,EOG-V]
D61	ED-307572	D SILICON H 1SS131 [EO,EOG,EOG-V]
D202	* ED-397233J	D ZENER H HZS5C3
D203	ED-307572	D SILICON H 1SS131
D204	ED-307572	D SILICON H 1SS131
D205	ED-422519J	D ZENER H MTZJ4.3B T26
D211	ED-425400J	D ZENER H HZS12A3L
D212	ED-307572	D SILICON H 1SS131
D213	ED-307572	D SILICON H 1SS131
D214	ED-405247J	D ZENER H MTZJ2.7A T26
D330	ED-307572	D SILICON H 1SS131
D340	ED-402181J	D ZENER H HZS3A1
D401	ED-422251J	D LED GL528VTB INFRARED T05
D402	ED-390012J	D LED GL4800 INFRARED
D403	ED-390012J	D LED GL4800 INFRARED
D404	ED-400172J	D ZENER H HZS7A3L
D405	ED-307572	D SILICON H 1SS131
D406	ED-307572	D SILICON H 1SS131
D408	ED-307572	D SILICON H 1SS131
D409	ED-307572	D SILICON H 1SS131
D410	ED-404220J	D ZENER H MTZJ9.1B T26
D411	ED-422161J	D ZENER H HZS3B3 T26
D412	* ED-511907	D SILICON 1N4002 100/1.0A
D413	* ED-511907	D SILICON 1N4002 100/1.0A
D414	ED-307572	D SILICON H 1SS131
D415	ED-307572	D SILICON H 1SS131
D416	* ED-511907	D SILICON 1N4002 100/1.0A
D417	* ED-511907	D SILICON 1N4002 100/1.0A
D418	ED-307572	D SILICON H 1SS131
D419	ED-405604J	D ZENER H MTZJ4.3C T26
D601	ED-307572	D SILICON H 1SS131 [EM,EDG,EOG]
D602	ED-307572	D SILICON H 1SS131
D603	ED-307572	D SILICON H 1SS131
D691	ED-307572	D SILICON H 1SS131
D692	ED-307572	D SILICON H 1SS131 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
D693	ED-307572	D SILICON H 1SS131 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
D694	ED-307572	D SILICON H 1SS131 [EOG-V]
D760	ED-307572	D SILICON H 1SS131
FL330-A	EO-422331J	COIL OSC 1 V1182KN 700 KHZ [EK,G405EA/EDG]
FL330-B	EO-418789J	COIL OSC 1 V1188KN 700 KHZ [EXCEPT EK,G405EA/EDG]
FR201	* ER-397385J	R FUSE V T05 RF25SCVTP 1/4WR20K
FR202	* ER-410380J	R FUSE V T05 RF25SCVTP 1/4WR91K
FR204	* ER-408829J	R FUSE V T05 RF25SCVTP 1/4WR11K
FR401	* ER-400729J	R FUSE V T05 RF25SCVTP 1/4WR47K
FR402	* ER-418648J	R FUSE V T05 RF25SCVTP 1/4WR24K
IB401	EH-383056J	COMP R RGLE4X 103J
IB402	EH-403945J	COMP R RGLE9X 103J
IB403	EH-383083J	COMP R RGLE3X 103J
IB404	EH-386636J	COMP R RGLE6X 103J
IC1	EI-389622J	IC L5631
IC102	EI-418647J	IC MC14066BFR2 [EXCEPT EOH[Y2],EOG,EOG-V]
IC201	* EI-418723J	IC NJM4558DX
IC203	* EI-416620J	IC NJM7809FA
IC401	EI-418865J1	IC M37770M4H-162FP AF(SYP2
IC402	EI-425537J	IC LA6358NM
IC403	EI-403233J	IC LB1641
IC404	EI-425667J	IC 24LC01B/SN
IC405-A	EI-418861J1	IC UPD75217GF-645-3BEA BXOPP2 [EXCEPT EOG-V]
IC405-B	EI-418861J2	IC UPD75217GF-652-3BEA BXOPP3 [EOG-V]
IC406	EI-416691J	IC XC61AC3002TH T05
IC601	EI-394856J	IC LC8992
IC602	EI-422151J	IC AN3558FBS
IC603	EI-410451J	IC MC14053BFR2 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
IC604	EI-422375J	IC MC14013BFR2 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
IC605	EI-419157J	IC LC74760-9044
IC741	EI-366892	IC BA7025L [EM,EDG]
IF1-A	BV-403236J1	VIF UNIT KX EA
IF1-B	BV-403242J1	VIF UNIT KX ES
IF1-C	BV-403239J1	VIF UNIT KX EM
IF1-D	BV-422132J	VIF UNIT AX EDG

Ref. No.	Part No.	Description
IF1-E	BV-403238J1	VIF UNIT KX EK
IF1-F	BV-403241J1	VIF UNIT KX EOG [EO]
IF1-G	BV-403240J2	VIF UNIT KX EOH
IF1-H	BV-416729J	VIF UNIT KX-TEK EOG [EOG,EOG-V]
L70-A	EO-373260	COIL FIX 1 LAP02 F05 1R0K [EA]
L70-B	EO-390998J	COIL FIX 1 LAP02 F05 R68K [EM,EK]
L71	EO-410091J	COIL FIX 1 SPT0203SA T26 100J [EXCEPT EK]
L102	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J
L103	EO-380734J	COIL FIX 1 LF-5.0S F05 6R8K [EOG,EOG-V]
L201	* EO-422134J	COIL FIX 2 PC7-330K 330K
L202	* EO-422134J	COIL FIX 2 PC7-330K 330K
L203	EO-422134J	COIL FIX 2 PC7-330K 330K
L330	EO-390716J	COIL FIX 1 LHL06TB T05 272J
L402	EO-410091J	COIL FIX 1 SPT0203SA T26 100J [EXCEPT EK]
L403	EO-410091J	COIL FIX 1 SPT0203SA T26 100J [EXCEPT EK]
L601	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L602	EO-410094J	COIL FIX 1 SPT0203SA T26 180J
L603	EO-381193J	COIL FIX 1 EL0405SKI 271K
L604	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L605	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J
L606	EO-388087J	COIL FIX 1 LF-5.0S F05 331K
L607	EO-410090J	COIL FIX 1 SPT0203SA T26 8R2J
L608	EO-387803J	COIL FIX 1 EL0405SKI 221K
L609	EO-410101J	COIL FIX 1 SPT0203SA T26 680J
L610	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J
L611	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L614	EO-410089J	COIL FIX 1 SPT0203SA T26 6R8J
L615	EO-410102J	COIL FIX 1 SPT0203SA T26 820J
L616	EO-410094J	COIL FIX 1 SPT0203SA T26 180J
L691	EO-404430J	COIL FIX 1 SPT0203SA T26 101J
L692	EO-410090J	COIL FIX 1 SPT0203SA T26 8R2J
L693	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L694	EO-418521J	COIL FIX 1 LAP02TA T26 121J
L698	EO-410097J	COIL FIX 1 SPT0203SA T26 330J
L740	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J [EM,EDG]
L741	EO-368129	COIL FIX 1 TL-8 153J [EM,EDG]
L750	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
L760	EO-345876	COIL FIX 1 EL0606SKI 470J
L762	EO-410091J	COIL FIX 1 SPT0203SA T26 100J [EXCEPT EA,ES,EK]
MD1-A	BV-387610J1	RF CONVERTER YAA21-0809G EA [EA]
MD1-B	BV-403410J	RF CONVERTER MDLK6B733A EK [ES,EK]
MD1-C	BV-387611J1	RF CONVERTER YAA21-0808G EV [EM]
MD1-D	BV-425222J	RF CONVER. YAA21-1001G G/K EDG [EDG]
MD1-E	BV-403409J	RF CONVERTER MDLK6D755A EO [EO,EOH,EOG,EOG-V]
P102	EJ-422096J	SOCKET HLEM14S-1 14P [EOH[Y2],EOG,EOG-V]
P301	EJ-418763J	SOCKET HLEM19S-1 19P
P401	EJ-422352J	PLUG TRC-X30P-A2 30P
P402	EJ-422176J	PLUG TKC-M07P-B1 7P
P403	EJ-422178J	PLUG TKC-G08P-A1 8P
P605	EJ-388344J	SOCKET HLEM9S-1 9P
PJ101-A	EJ-387614J	PIN J T6353-ABCB YL BK 4P [EA,ES,EM]
PJ101-B	EJ-418785J	PIN J T6356-ABFC YLW,BLACK 2P [EK,EO,EOH[E][Y1]]
PJ102	EJ-387613J	SOCKET M1812 21P [EDG,EK,EO,EOH[E][Y1]]
SF741	EH-366894	FILTER CE SFE-4.16MB 4.16MHZ [EM,EDG]
SW401	ES-422247J	SW MICRO MPU10181MLB0 [EXCEPT ES,EM,EDG]
SW402	ES-422247J	SW MICRO MPU10181MLB0
TH201	* EX-412521J	THERMISTOR 911P83E101NH07 T05
TR1	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EA,EM]
TR2	ET-414836J	TR CHIP UN2213 TXT08E [EXCEPT ES,G511EDG]
TR3	ET-421977J	TR CHIP UN2113 TXT08E [EXCEPT EA,ES,EM,G511EDG]
TR10-A	ET-414816J	TR 2SC2668 Y T05 [EXCEPT EOG,EOG-V,G511EDG]
TR10-B	ET-397160J	TR 2SC3330 R,S,T,U,V [EOG,EOG-V,G511EDG]
TR11	ET-353899	TR 2SA1317 S,T,U
TR20	ET-353899	TR 2SA1317 S,T,U [EXCEPT EK]
TR21	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EXCEPT EK]
TR22	ET-353899	TR 2SA1317 S,T,U [EXCEPT EK]
TR23	ET-414836J	TR CHIP UN2213 TXT08E [EXCEPT EK]
TR24	ET-414836J	TR CHIP UN2213 TXT08E [EXCEPT EK]
TR30	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EXCEPT EOH,EOG,EOG-V]
TR31	ET-421990J	TR CHIP UN2211 TXT08E
TR32	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR33	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR34	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR35	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR36	ET-421989J	TR CHIP UN2210 R,S TXT08E [EOH,EOG,EOG-V]
TR37	ET-416933J	TR CHIP 2SD601A R,S TXT08E [EOH,EOG,EOG-V]
TR50	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR101	ET-353899	TR 2SA1317 S,T,U
TR102	ET-353899	TR 2SA1317 S,T,U
TR104	ET-397160J	TR 2SC3330 R,S,T,U,V
TR106	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EOH[Y2],EOG,EOG-V
TR107	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EOH[Y2],EOG,EOG-V
TR108	ET-419710J	TR UN4113 T05 [EXCEPT EOH[Y2],EOG,EOG-V
TR109	ET-421941J	TR UN4213 T05 [EXCEPT EOH[Y2],EOG,EOG-V
TR111	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EOH[Y2],EOG,EOG-V]
TR112	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EOH[Y2],EOG,EOG-V
TR113	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EOH[Y2],EOG,EOG-V
TR203	* ET-422464J	TR C.2SD2118 Q,R,S FPTLT16
TR210	ET-422154J	TR 2SB1426 Q,R T05
TR211	* ET-404498J	TR 2SB1306 Q,R T05
TR212	ET-373391	TR DTC143ZS [EK,EOG,EOG-V,G415EOH[Y1]
TR213	ET-419707J	TR UN4110 R,S T05
TR214	ET-373391	TR DTC143ZS
TR215	ET-422033J	TR UN4116 T05 R,S
TR216	ET-418740J	TR DTA115TL T05
TR217	ET-422031J	TR UN4210 R,S T05
TR218	ET-373391	TR DTC143ZS
TR330	ET-397160J	TR 2SC3330 R,S,T,U,V
TR331	ET-397160J	TR 2SC3330 R,S,T,U,V
TR332	ET-360399	TR DTC114TS
TR401	ET-414836J	TR CHIP UN2213 TXT08E
TR402	ET-421993J	TR CHIP UN2215 R,S TXT08E
TR403	ET-419710J	TR UN4113 T05
TR404	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR405	ET-390009J	TR PHOTO PT493F
TR406	ET-390009J	TR PHOTO PT493F
TR407	ET-390010J	TR PHOTO PT4800
TR408	ET-390010J	TR PHOTO PT4800
TR409	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR410	ET-414836J	TR CHIP UN2213 TXT08E
TR412	ET-421977J	TR CHIP UN2113 TXT08E
TR413	ET-422154J	TR 2SB1426 Q,R T05

Ref. No.	Part No.	Description
TR414	ET-421990J	TR CHIP UN2211 TXT08E
TR415	ET-421977J	TR CHIP UN2113 TXT08E
TR416	ET-421990J	TR CHIP UN2211 TXT08E
TR601	ET-353899	TR 2SA1317 S,T,U
TR602	ET-397160J	TR 2SC3330 R,S,T,U,V
TR603	ET-421993J	TR CHIP UN2215 R,S TXT08E [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR604	ET-414836J	TR CHIP UN2213 TXT08E [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR605	ET-414836J	TR CHIP UN2213 TXT08E
TR606	ET-421999J	TR CHIP UN221D TXT08E
TR607	ET-421993J	TR CHIP UN2215 R,S TXT08E
TR608	ET-421941J	TR UN4213 T05 [EXCEPT EA,ES,EK]
TR609	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR610	ET-414836J	TR CHIP UN2213 TXT08E
TR611	ET-353899	TR 2SA1317 S,T,U
TR612	ET-353899	TR 2SA1317 S,T,U
TR613	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR615	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR616	ET-421999J	TR CHIP UN221D TXT08E
TR617	ET-397160J	TR 2SC3330 R,S,T,U,V
TR618	ET-421945J	TR UN4216 R,S T05 [EXCEPT EA,ES,EK]
TR624	ET-414836J	TR CHIP UN2213 TXT08E
TR625	ET-421945J	TR UN4216 R,S T05
TR626	ET-421941J	TR UN4213 T05
TR691	ET-397160J	TR 2SC3330 R,S,T,U,V
TR692	ET-421941J	TR UN4213 T05 [EOG]
TR693	ET-397160J	TR 2SC3330 R,S,T,U,V
TR694	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR695	ET-419708J	TR UN4111 T05 [EXCEPT EA,ES,EK]
TR696	ET-421941J	TR UN4213 T05 [EXCEPT EA,ES,EK]
TR697	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR699	ET-421941J	TR UN4213 T05 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR742	ET-397160J	TR 2SC3330 R,S,T,U,V [EM,EDG]
TR747	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR748	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR749	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR750	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR751	ET-421941J	TR UN4213 T05 [EXCEPT EK,EO,EOH[Y1][Y2],G415EA]
TR752	ET-397160J	TR 2SC3330 R,S,T,U,V [EOG-V]
TR753	ET-416933J	TR CHIP 2SD601A R,S TXT08E [EOG-V]
TR763	ET-353899	TR 2SA1317 S,T,U
TR764	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR765	ET-414836J	TR CHIP UN2213 TXT08E
TR766	ET-414836J	TR CHIP UN2213 TXT08E
TR767	ET-416932J	TR CHIP 2SB709A R,S TXT08E [EXCEPT EA,ES,EK]
TR799	ET-416933J	TR CHIP 2SD601A R,S TXT08E
TR800	ET-416933J	TR CHIP 2SD601A R,S TXT08E [EOG]
TU1-A	EE-419189J	TV TUNER VTSH6AZ01 EA [EA]
TU1-B	EE-387603J1	TV TUNER TERE1-019B EO [ES]
TU1-C	EE-405638J	TV TUNER VTSS6CZ EM [EM]
TU1-D	EE-416854J	TV TUNER TEKE1-042A EO [G405EDG]
TU1-E	EE-387604J3	TV TUNER TERE1-007D EOG [EO]
TU1-F	EE-387607J1	TV TUNER TERB1-008B EK [EK]
TU1-D	EE-412395J	TV TUNER ENV-578C9F1 EOH [EOH]
TU1-E	EE-416524J1	TV TUNER TEKE4-034B EOG [EOG,EOG-V,G511EDG]
VL700	EO-422362J	COIL TUN 1 V1184-049B VCO
VR602	EV-389478J	R S-FIX H T05EVNDXAA03 0.1W153
VR603	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
VR604	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
VR605	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR606	EV-389478J	R S-FIX H T05EVNDXAA03 0.1W153
VR691	EV-397433J	R S-FIX H T05EVNDXAA03 0.1W152
X401	EI-425240J	OSC X'TAL APS-1011A 16.000MHZ
X402	EI-418824J	OSC CE W/C FCR4.19MC5 4.190MHZ
X403	EI-368825M	OSC X'TAL C-002RX 32.768KHZ
X601	EI-422510J	OSC X'TAL HC-49/U 4433.619KHZ
X700	EI-416872J	OSC X'TAL APS1004A 17.734475MH
1	SZ-420137J	HOLDER S/E SENSOR
2	SZ-420136J	HOLDER PHOTO SENSOR
3	SZ-423208J	HOLDER LED

7. SAT P.C. BOARD (EK,EO,EOH(E)/(Y1))

Ref. No.	Part No.	Description
IC1	EI-310036	IC TC4066BP
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2	ET-421941J	TR UN4213 T05
TR3	ET-353899	TR 2SA1317 S,T,U
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V
TR5	ET-353899	TR 2SA1317 S,T,U
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V

8. TR (A) P.C. BOARD

Ref. No.	Part No.	Description
TR201	* ET-422511J	TR 2SD2375 P

9. TR (B) P.C. BOARD

Ref. No.	Part No.	Description
TR411	* ET-422511J	TR 2SD2375 P

10. DECODER (A) P.C.BOARD(EOH(Y2),EOG,EOG-V)

Ref. No.	Part No.	Description
L1	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J
PJ1	EJ-389864J	SOCKET M1817 21P
PJ2	EJ-389915J	SOCKET M1817-A 21P
PJ3	EJ-422099J	PIN J JPJ1131-010010 1P
PJ4	EJ-422097J	PIN J JPJ1131-010040 1P
TR1	ET-353899	TR 2SA1317 S,T,U
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-353899	TR 2SA1317 S,T,U
TR7	ET-397160J	TR 2SC3330 R,S,T,U,V

11. DECODER (B) P.C.BOARD(EOH(Y2),EOG,EOG-V)

Ref. No.	Part No.	Description
IC31	EI-310036	IC TC4066BP
IC32	EI-310036	IC TC4066BP
IC33	EI-310036	IC TC4066BP
L31	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J
P31	EJ-422096J	SOCKET HLEM14S-1 14P

Ref. No.	Part No.	Description
TR31	ET-419710J	TR UN4113 T05
TR32	ET-364040	TR UN421D
TR33	ET-397160J	TR 2SC3330 R,S,T,U,V
TR34	ET-397160J	TR 2SC3330 R,S,T,U,V
TR35	ET-397160J	TR 2SC3330 R,S,T,U,V
TR36	ET-421941J	TR UN4213 T05
TR37	ET-419710J	TR UN4113 T05
TR38	ET-397160J	TR 2SC3330 R,S,T,U,V
TR39	ET-397160J	TR 2SC3330 R,S,T,U,V
TR40	ET-353899	TR 2SA1317 S,T,U
TR41	ET-421941J	TR UN4213 T05
TR42	ET-353899	TR 2SA1317 S,T,U
TR43	ET-353899	TR 2SA1317 S,T,U
TR44	ET-397160J	TR 2SC3330 R,S,T,U,V
1	EW-421818J	CORD FFC BD P1.25 L=110 14P

12. VIF UNIT (EXCEPT EDG)

Ref. No.	Part No.	Description
CF1-A	EH-373916	FILTER CE SAF36.9MZ70Z [EA]
CF1-B	EH-376120	FILTER CE SAF38.9MW70Z [ES]
CF1-C	EH-373917	FILTER CE SAF39.5MZ70Z [EK]
CF1-D	EH-730625J	FILTER CE SAF38.9MZW70Z [EXCEPT EA,ES,EK]
CF2-A	EH-373921	FILTER CE SFE6.0MB [ES,EK]
CF2-B	EH-373920	FILTER CE SFE5.5MB [ECEPT ES,EK]
CF3-A	EH-729986J	FILTER CE TPS5.5MB2 [EM]
CF3-B	EH-373919	FILTER CE TPS6.0MB [ES,EK]
CF3-C	EH-368948	FILTER CE TPS5.5MW 5.5000MHZ [EXCEPT EM,ES,EK]
IC1	EI-368809	IC M51496P
L1	EO-387800J	COIL FIX 1 EL0405SKI 2R7K
L3-A	EO-732831J	COIL 6F16437A2 [ES,EK]
L3-B	EH-733514J	COIL 6F16437A1 [EXCEPT ES,EK]
L4-A	EH-733515J	COIL 6F16436A2 [EA]
L4-B	EO-732832J	COIL 6F16435A1 [EXCEPT EA]
L5-A	EH-733516J	COIL 6F16441A1 [EA]
L5-B	EO-732833J	COIL 6F16436A1 [EXCEPT EA]
L6-A	EO-387798J	COIL FIX 1 EL0405SKI 150K [ES,EK]
L6-B	EO-387799J	COIL FIX 1 EL0405SKI 180K [EXCEPT ES,EK]
L7-A	EO-387798J	COIL FIX 1 EL0405SKI 150K [ES,EK]
L7-B	EO-387799J	COIL FIX 1 EL0405SKI 180K [EXCEPT ES,EK]
L8	EO-387802J	COIL FIX 1 EL0405SKI 330K
L51	EO-725824J	COIL 6F16185A1 [EO,EOG,EOG-V]
L52	EO-725825J	COIL 6F16186A1 [EO,EOG,EOG-V]
Q1	ET-725820J	TR CHIP 2SC2735J
Q2	ET-370818	TR CHIP 2SA1235
Q51	ET-731437J	TR CHIP DTC114EK [EO,EOG,EOG-V]
Q52	ET-731437J	TR CHIP DTC114EK [EO,EOG,EOG-V]
VR2	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W222
VR51	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
VR52	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223 [EO,EOG,EOG-V]

13. VIF UNIT (EDG)

Ref. No.	Part No.	Description
CF1	EH-733563J	FILTER CE SAF38.9MZC70Z
CF2	EH-376338	FILTER CE TPS6.5MB
CF3	EH-368948	FILTER CE TPS5.5MW 5.5000MHZ
CF4	EH-729986J	FILTER CE TPS5.5MB2
CF51	EH-412432J	FILTER CE SFSH6.5MDB 6.500MHZ
CF52	EH-368827	FILTER CE SFS5.5MD 5.500MHZ
CF53	EH-373921	FILTER CE SFE6.0MB
IC1	EI-368809	IC M51496P
L1	EO-387782J	COIL FIX 1 EL0405SKI 2R2K
L2	EO-732831J	COIL 6F16437A2
L3	EO-732832J	COIL 6F16435A1
L4	EO-732833J	COIL 6F16436A1
L5	EO-397238J	COIL FIX 1 EL0405SKI 6R8K
L6	EO-387798J	COIL FIX 1 EL0405SKI 150K
L51	EO-396361J	COIL FIX 1 EL0405SKI 8R2K
L52	EO-387803J	COIL FIX 1 EL0405SKI 221K
Q1	ET-725820J	TR CHIP 2SC2735J
Q2	ET-370818	TR CHIP 2SA1235
Q3	ET-370819	TR CHIP 2SC3052
Q4	ET-370818	TR CHIP 2SA1235
Q51	ET-370819	TR CHIP 2SC3052
Q52	ET-370819	TR CHIP 2SC3052
VR1	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
VR2	EV-396023J	R S-FIX H T05EVNDXAA03 0.1W222
X51	EI-368829	OSC CE CSB512P

14. PRE-AMP P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D50	ED-396059J	D ZENER H HZS6B2 [EXCEPT EK,G405EA/EDG]
FL50	EO-418430J	COIL OSC 1 V1170-TK 70.0KHZ [EXCEPT EK,G405EA/EDG]
IC1	EI-416607J	IC AN3386NK-A
IC101	EI-414861J	IC LA7285
L1	EO-389412J	COIL FIX 1 LAV35VB007 T05 101J
L30	EO-410098J	COIL FIX 1 SPT0203SA T26 390J
L50	EO-390716J	COIL FIX 1 LHL06TB T05 272J [EXCEPT EK,G405EA/EDG]
L101	EO-390717J	COIL FIX 1 LHL06TB T05 103J
P1	EJ-422093J	SOCKET HLEM9R-1 9P
P2	EJ-418748J	SOCKET HLEM19R-1 19P
TH30	EX-405691J	THERMISTOR NTH5D332KA
TR1	ET-421941J	TR UN4213 T05
TR2	ET-421941J	TR UN4213 T05
TR30	ET-397160J	TR 2SC3330 R,S,T,U,V
TR31	ET-397160J	TR 2SC3330 R,S,T,U,V
TR32	ET-421939J	TR UN4211 T05
TR33	ET-397160J	TR 2SC3330 R,S,T,U,V
TR34	ET-353899	TR 2SA1317 S,T,U
TR50	ET-421936J	TR UN411F T05 [EXCEPT EK,G405EA/EDG]
TR51	ET-397160J	TR 2SC3330 R,S,T,U,V [EXCEPT EK,G405EA/EDG]
VR1	EV-403968J	R S-FIX V T05EVNDCAA03 0.1W473

15. OPERATION P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
D51	ED-307572	D SILICON H 1SS131
D61	ED-307572	D SILICON H 1SS131
FL1	EM-422143J	IND FL FV642G CHARACTER
P1	EJ-422348J	SOCKET TRC-X30X-A2 30P
PH1	ET-422349J	DETECTOR TFMT5380

Ref. No.	Part No.	Description
SW1	ES-408404J	SW TACT EVQ 235 07K T05
SW2	ES-411687J	SW TACT EVQ-PAE05R
SW41	ES-411687J	SW TACT EVQ-PAE05R
SW42	ES-411687J	SW TACT EVQ-PAE05R
SW43	ES-411687J	SW TACT EVQ-PAE05R
SW61	ES-411687J	SW TACT EVQ-PAE05R
SW62	ES-411687J	SW TACT EVQ-PAE05R
SW63	ES-411687J	SW TACT EVQ-PAE05R
SW64	ES-396610J	SW TACT SOR-122HS T05
SW65	ES-396610J	SW TACT SOR-122HS T05
SW66	ES-411687J	SW TACT EVQ-PAE05R
SW67	ES-411687J	SW TACT EVQ-PAE05R
TR1	ET-421952J	TR UN421L T05
TR2	ET-421952J	TR UN421L T05

16. FRONT P.C. BOARD

Ref. No.	Part No.	Description
IC801	EI-386468J	IC BA3308 [EXCEPT EK,G405EA/EDG]
L801	EO-353588	COIL FIX 1 LAP02 F05 2R2K [EOG,EOG-V]
PJ821	EJ-422355J	PIN J JPJ4022-01-010 1P
PJ822	EJ-422356J	PIN J JPJ4022-01-040 1P
PJ823	EJ-408399J	PHONE J 2P YKB21-5165 3.5 [EXCEPT EK,G405EA/EDG]
TR822	ET-397160J	TR 2SC3330 R,S,T,U,V
TR823	ET-397160J	TR 2SC3330 R,S,T,U,V

17. POWER SUPPLY P.C. BOARD

Ref. No.	Part No.	Description
C1	* EC-422101J	C MMY V CUT MKTR40 104M 275AC
C2	* EC-422101J	C MMY V CUT MKTR40 104M 275AC
C3	* EC-418706J	C CE V CUT CS11 E222M 400AC
C4	* EC-418706J	C CE V CUT CS11 E222M 400AC
C5	* EC-418706J	C CE V CUT CS11 E222M 400AC
C6	* EC-418706J	C CE V CUT CS11 E222M 400AC
C7	* EC-418706J	C CE V CUT CS11 E222M 400AC
C8	* EC-418706J	C CE V CUT CS11 E222M 400AC
C9	* EC-418706J	C CE V CUT CS11 E222M 400AC
C11-A	* EC-422103J	C EC V CUT TWSS 470M400.0DC [EXCEPT EM]
C11-B	* EC-422104J	C EC V CUT USW18 820M 400.0DC [EM]
C12	* EC-418760J	C CE V T05 FK22 Y5R103K 500DC
C13	* EC-418759J	C CE V T05 CC45 SL121K1000DC
C15	* EC-418841J	C MMY V T05 ECQ-VL2 333J 50DC
C24	EC-418690J	C EC V CUT SXE12 222M 6.3DC
D1	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D2	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D3	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D4	* ED-422125J	D SILICON 1N4006 T26 800/1.0A
D5	* ED-418976N	D SILICON EG01CW T05 1000/0.5A
D6	ED-307572	D SILICON H 1SS131
D7	ED-307572	D SILICON H 1SS131
D20	ED-422243N	D SCHOT.AK03WK T05 [EM,EOG-V]
D21	ED-425207J	D SILICON ERA18-02 T26
D22	ED-418625J	D SCHOTTKY EK14LF-G1 S12 [EXCEPT EOG-V]
D23	ED-418624J	D SCHOTTKY RK39LF-B2 S12 [EXCEPT EOG-V]
D24	ED-425207J	D SILICON ERA18-02 T26
D25	* ED-422420J	D ZENER H MTZJ20C T26
D27	* ED-422420J	D ZENER H MTZJ20C T26
D28	ED-422243N	D SCHOT.AK03WK T05 [EXCEPT EM,EOG-V]
D29	ED-422462J	D SCHOTTKY RK49 015-302 S15 [EOG-V]
D30	ED-422244J	D SCHOTTKY RK34LF-B2 S12 [EOG-V]
D31	ED-307572	D SILICON H 1SS131
D32	ED-422243N	D SCHOT.AK03WK T05
F1	* EF-601964	FUSE SET T 250V 1.60A
FR1-A	* ER-410380J	R FUSE V T05 RF25SCVTP1/4WR91K [EXCEPT EM,EOG-V]
FR1-B	* ER-408829J	R FUSE V T05 RF25SCVTP1/4WR11K [EM]
IC2	EI-422128N	IC TA76431S T05
L1	* EO-339907	COIL LF FKOB160MH16 1000.0UH [EOG,EOG-V]
L2	* EO-418689J	COIL LF LF-4DA-333
PH1	* ET-422113J	PHOTO COUPLER PS2561-1-V
P1	* EJ-416590J1	SOCKET INLET CCT-2302-0371 2P
R1	* ER-418739J	R CT P RGG3 3W 4R7K
R2	* ER-422181J	R OMF H S20 FS ERG3SH 3W 823J
R6-A	* ER-422186J	R OMF H S15 FS PR02 2W 151J [EXCEPT EM]
R6-B	* ER-425232J	R OMF H S15 FS PR02 2W 431J [EM]
R7-A	* ER-411836J	R OMF H S15 FS 2W 1R0J [EXCEPT EM]
R7-B	* ER-418808J	R OMF H S15 FS RSSX 2W R68J [EM]
R11	ER-318316	R MF H F10 1/4W 2201F
R12	ER-314600	R MF H 1/4W 1601F
R23	ER-425232J	R OMF H S15 FS PR02 2W 431J [EM]
R25	ER-425231J	R OMF H S20 FS ERG3SH 3W 431J [EM]
R27-A	* ER-386215J	R OMF H S12 FS 1W 220J [EXCEPT EM]
R27-B	* ER-397193J	R OMF V T05FS ERG1SE 1W 100J [EM]
T1-A	* BT-425397N	TRANS POW V1182 EK [EXCEPT EM,EOG-V]
T1-B	* BT-422116N	TRANS POW V1184 EN [EM]
T1-C	* BT-422117N	TRANS POW V1190 EOG [EOG-V]
TR1	* ET-422118J	TR 2SC4304 O,Y
TR2	* ET-422129J	TR 2SD2132 U,V T05

18. VPS/PDC P.C.BOARD(EK,EOG,G415EOH(Y1))

Ref. No.	Part No.	Description
IC201	EI-422090J	IC SAA5233P
L1	EO-381189J	COIL FIX 1 EL0405SKI 100K
L2	EO-403937J	COIL FIX 1 EL0405RA T05 4R7J
L201	EO-412317J	COIL FIX 1 LAP02TA T26 4R7J
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
X201	EI-422092J	OSC X'TALAPS1008 3RD27.000MHZ

19. VPST/PDCT P.C. BOARD (EOG-V)

Ref. No.	Part No.	Description
D101	ED-419028J	D SILICON CHIP MA152WK TXT08E
FL101	EH-394684J	FILTER EMI ZBF503D-01TA T05
FR121	* ER-408963J	R FUSE V T05 RF25SCVTP 1/4WR33K
IB101	EH-383119J	COMP R RGLE4X 473J
IC101	EI-418863J2	IC UPD78014CW-072AKVP T3
IC102	EI-425666J	IC 24LC08B/SN
IC103	EI-422375J	IC MC14013BFR2
IC121	EI-386393J	IC BA7605N
IC141	EI-414885J	IC CF72306
IC142	EI-414884J	IC CF72307
IC143	EI-410125J	IC V53C464AP-80
IC241	EI-422365J	IC CXA1645M
IC301	EI-422382J	IC SAA5233T
L102	EO-410091J	COIL FIX 1 SPT0203S/T26 100J
L103	EO-410091J	COIL FIX 1 SPT0203S/T26 100J
L121	EO-410091J	COIL FIX 1 SPT0203S/T26 100J
L142	EO-410091J	COIL FIX 1 SPT0203S/T26 100J

Ref. No.	Part No.	Description
L143	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L144	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L241	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L242	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L271	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L272	EO-410101J	COIL FIX 1 SPT0203SA T26 680J
L301	EO-412317J	COIL FIX 1 LAP02TA T26 4R7J
L302	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
TR121	ET-419706J	TR 2SB1434 R,S T05
TR122	ET-422003J	TR CHIP UN221L TXT08E
TR123	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR202	ET-397160J	TR 2SC3330 R,S,T,U,V
TR203	ET-353899	TR 2SA1317 S,T,U
TR204	ET-397160J	TR 2SC3330 R,S,T,U,V
TR205	ET-397160J	TR 2SC3330 R,S,T,U,V
TR206	ET-421952J	TR UN421L T05
TR241	ET-416932J	TR CHIP 2SB709A R,S TXT08E
TR271	ET-353899	TR 2SA1317 S,T,U
TR272	ET-353899	TR 2SA1317 S,T,U
TR273	ET-397160J	TR 2SC3330 R,S,T,U,V
TR274	ET-397160J	TR 2SC3330 R,S,T,U,V
X101	EI-414889J	OSC CE CST10.0MTW-TF01 T05
X141	EI-422503J	OSC X'TALAPS1010B 13.875MHZ
X301	EI-422092J	OSC X'TALAPS1008 3RD27.000MHZ

20. CDR P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-397614J	D ZENER H HZS9A3L T26
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
DL1	EH-422240J	DL ADL-SN2344Q
IC1	EI-422218J	IC M51494L
IC2	EI-400756J	IC NJM4558L-B
L1	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L2	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L3	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L4	EO-414616J	COIL FIX 1 LAP02TA T26 270J
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR3	ET-397160J	TR 2SC3330 R,S,T,U,V
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V
TR10	ET-397160J	TR 2SC3330 R,S,T,U,V
TR11	ET-353899	TR 2SA1317 S,T,U
TR12	ET-397160J	TR 2SC3330 R,S,T,U,V
TR13	ET-397160J	TR 2SC3330 R,S,T,U,V
TR14	ET-397160J	TR 2SC3330 R,S,T,U,V
TR15	ET-397160J	TR 2SC3330 R,S,T,U,V
TR16	ET-353899	TR 2SA1317 S,T,U
TR17	ET-397160J	TR 2SC3330 R,S,T,U,V
VR3	EV-405248J	R S-FIX V T05EVNDCAA03 0.1W471
VR4	EV-403988J	R S-FIX V T05EVNDCAA03 0.1W102

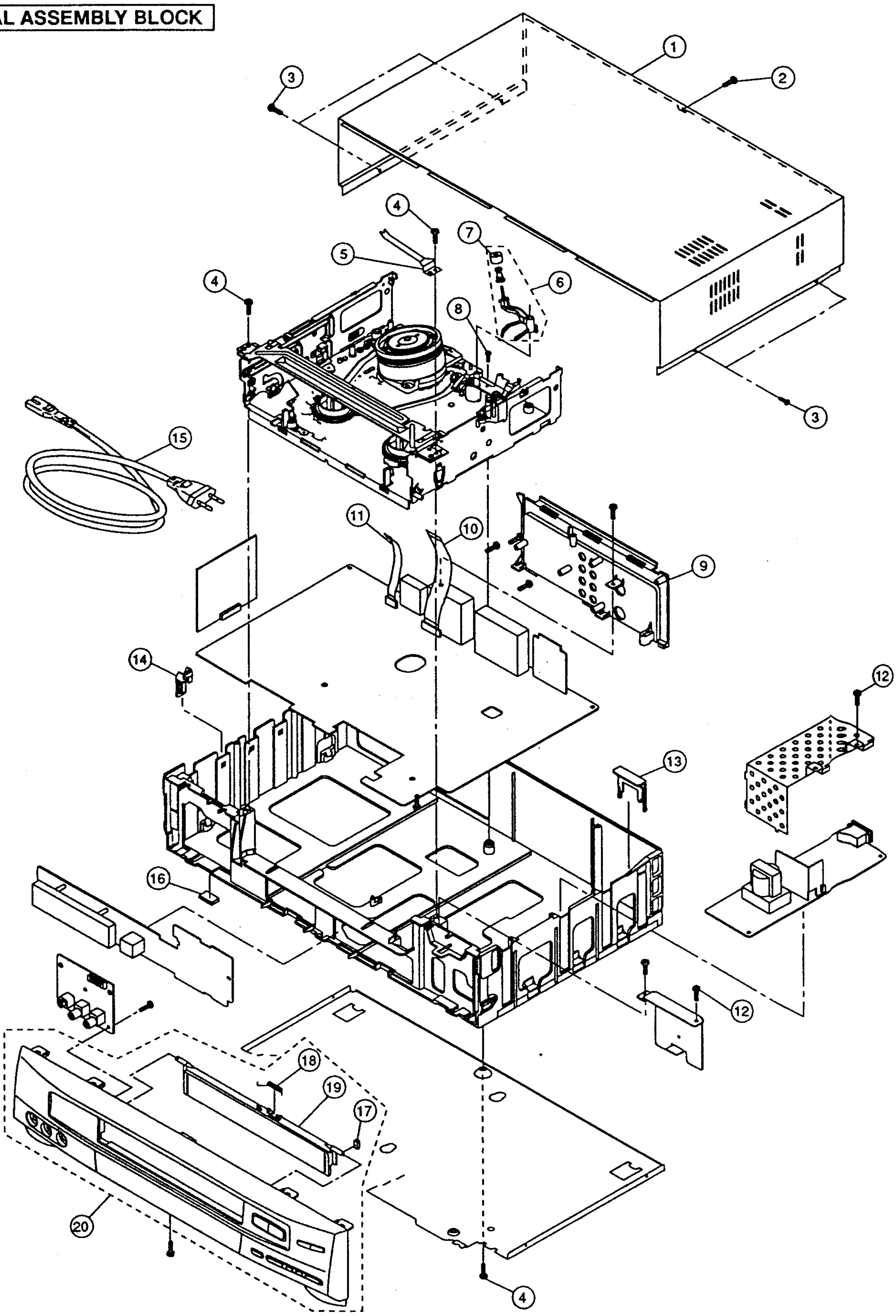
21. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-420296J	COVER UPPER AX
2	ZS-427134J	PT BID30X10STL BZN EARTH LOCK
3	ZS-385611J	DT BID26X06STL BNI
4	ZS-362378	PLX BID30X10STL CMT
5	MZ-420496N1	EARTH MECHA (SG)
6	HZ-V1182A200A	HEAD CLEANER BLK G204ES
7	HZ-417681J	ROLLER HEAD CLEANER(2)
8	ZS-407886J	BT PAN30X08STL BZN C100
9-A	SP-422597N	PANEL REAR JACK EA (SG) [EA,EM]
9-B	SP-422602N	PANEL REAR JACK EDG (SG) [EDG]
9-C	SP-422598N	PANEL REAR JACK ES (SG) [ES]
9-D	SP-422686N	PANEL REAR JACK EOH(4) (SG) [EK,EO,EOH[E][Y1]]
9-E	SP-422601N	PANEL REAR JACK EOH(3) (SG) [EOH[Y2]]
9-F	SP-422604N	PANEL REAR JACK EOG(2) (SG) [EOG,EOG-V]
10	EW-421820J	CORD FFC BD P1.25 L=100 19P
11	EW-421819J	CORD FFC BD P1.25 L=90 9P
12	ZS-383379J	PLX BID30X08STL CMT
13	SZ-420495N	COVER INLET (SG)
14	SZ-420493N	HOLDER PC(1) (SG) [EK,EOG,EOG-V,G415EOH[Y1]]
15-A	✱ EW-419249M	AC CORD 200S SE-1 SE-4 B E [EXCEPT EA,EK]
15-B	✱ EW-419250M	AC CORD 200 S SA-5SA-6 S [EA]
15-C	✱ EW-419248M	AC CORD 200S SE-5 SE-6 B B [EK]
16	SA-420497J	FOOT AX
17	SZ-407193J	CUSHION MASK(2)
18	ZG-416251M	SP MASK(3) (SG)
19-A	SE-422879N	MASK CASSETTE VS-G405(E1) (SG) [G405EA]
19-B	SE-425909N	MASK CASSETTE VS-G405(E3) (SG) [G405EDG]
19-C	SE-422880N	MASK CASSETTE VS-G411(E2) (SG) [EM,ES]
19-D	SE-422876N	MASK CASSETTE VS-G411(E1) (SG) [G411EOH]
19-E	SE-422877N	MASK CASSETTE VS-G415(E1) (SG) [EK,EO,G415EOH/EA]
19-F	SE-424957N	MASK CASSETTE VS-G417(G1) (SG) [EOG]
19-G	SE-422878N	MASK CASSETTE VS-G418(G1) (SG) [EOG-V]
19-H	SE-425175N	MASK CASSETTE VS-G511(E1) (SG) [G511EDG]
20-A	BD-422857N	PANEL F(E)G405EA PART (SG)
20-B	BD-422852N	PANEL F(E)G405EDG PART (SG)
20-C	BD-422859N	PANEL F(E)G411EM PART (SG)
20-D	BD-422851N	PANEL F(E)G411ES PART (SG)
20-E	BD-418999N	PANEL F(E)G411EOH(Y1) PART(SG)
20-F	BD-418779N	PANEL F(E)G415EA PART (SG)
20-G	BD-423052N	PANEL F(E)G415EO PART (SG) [EO,G415EOH[Y2]]
20-H	BD-422854N	PANEL F(E)G415EK PART (SG)
20-I	BD-425907N	PANEL F(E)G415EOEOH(E)PART (SG)
20-J	BD-422860N	PANEL F(E)G415EOH(Y1) PART(SG)
20-K	BD-424954N	PANEL F(E)G417EOG PART (SG)
20-L	BD-422858N	PANEL F(E)G418EOG-V PART (SG)
20-M	BD-425173N	PANEL F(E)G511EDG PART (SG)

22. ACCESSARY

Ref. No.	Part No.	Description
1	EW-348414	CORD PAL
2-A	AV-416971M	REMOCON RC-W400E [G405EA/EDG]
2-B	AV-422459N	REMOCON RC-W474G [EOG-V]
2-C	AV-422456N	REMOCON RC-W564E [EK]
2-D	AV-422455N	REMOCON RC-W655E [ES,EM,G411EOH,G511EDG]
2-E	AV-422457N	REMOCON RC-W675E [EO,G415EOH]
2-F	AV-425517N	REMOCON RC-W675G [EOG]
2-G	AV-426106N	REMOCON RC-W685E [G415EA]
3-A	SP-733735N	LID AX SHOWVIEW-2(GER) [RC-W474G/W675G]
3-B	SP-733722N	LID AX VIDEO PLUS-1 [RC-W564E]
3-C	SP-733737N	LID AX LCD-2 [RC-W655E]
3-D	SP-733736N	LID AX SHOWVIEW-2(ENG) [RC-W675E]
3-E	SP-733753N	LID AX G-CODE-3 [RC-W685E]
4	SC-733720N	COVER BATTERY (AX)

FINAL ASSEMBLY BLOCK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NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

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Part No.	Ref. No.
AV416971M	22-2-A
AV422455N	22-2-D
AV422456N	22-2-C
AV422457N	22-2-E
AV422459N	22-2-B
AV425517N	22-2-F
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ZS432843	4-29
ZS467796	2-10
ZS550708	3-36
ZS563444	2-8
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ZW418816J	4-26
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ZW424667N	3-14

ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION
A	Audio or Analogue
AC	Alternating Current
ACC	Automatic Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
AH	Audio Head
AL	ALways (voltage)
ALC	Automatic Level Control
A-SW.P	Audio SWitching Pulse
A-MUTE	Audio MUTE
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLocK or BLacK
BOP	Blank Output Pulse
BPF	Band Pass Filter
BU	Back Up (voltage)
B/W	Black and White
C	Chroma or Color
CCD	Charge Coupled Device
CCIR	Comit Consultatif International des Radio communications
CH (ch)	CHannel (channel)
CLK	CLocK
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
CSW	Cassette SWitch
CSYNC	Composite SYNC
CTL	ConTrol
CUE	CUE
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETetct (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D.P.E	Drum Phase Error
D.PG	Drum Pulse Generator
EE	Electronic to Electronic
EF	Emitter Follower
EMPHA	EMPHAsis
ENV	ENVelope
EP	Extended Play
EP ROM	Erasable Programmable ROM
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop or Fast Foward
FG	Frequency Generator
Fig	Figure
FLD	FLuorescent Display
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
GND	GrouND
H	Horizontal
HP	Horizontal (sync) pulse
HPF	High Pass Filter
HQ	High Quality System
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
IMS	Interactive Monitor System
INS	INSert
INV	INVerter
L	Left
LED	Light Emitting Diode
LIM	LIMitter
LM	Loading Motor
LM STP	Loading Motor STop
LP	Long Play
LPF	Low Pass Filter
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-stayble Multi
MOD	MODulator
MRS	Motor ReverSe
NAP	NtscAmusement Pal
NG	Noise Gate
NICAM	Near Instanteneous CompandAudio Multiplex
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
OSC	OSCillator
PAL	Phase Alternation by Line
PB	Play Back
PCB (P.C.B)	Printed Circuit Board
P-COM	Phase-COMparator
P DOWN	Power DOWN
PG	Pulse Generator
P.I.P	Picture In Picture
PL, PLG	PLunger (PLunGer)
PRG (PGM)	PRoGram (ProGraM)
PU	Pick UP (head, pulse)
PWR	PoWeR
Q	Quality factor
R	Right
RAM	Random Access Memory
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RF	Radio Frequency
ROM	Read Only Memory
R.S SW	Record-Safety SWitch
RST (RES)	ReSet (RESet)
RVS	ReVerSe
S	Sensor, Shield
SAW	Surface Acoustic Wave
SC	SimulCast
S CLK	Serial CLocK
SECAM	SÉquentiel Couleur À Mémoire
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
S.VHS	Super VHS
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	Tuner AUDIO
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated (voltage)
V	Vertical or Video
VASS	Video Address Search System
VCO	Voltage Controlled Oscillator
VH	Video Head
VHF	Very High Frequency
VHS	Video Home System
VIF	Video Intermediate Frequency
VISS	Video Index Search System
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VPS	Video Program System
VPT	Video Programming by video Text
VT	Voltage for Tuning
WHT	WHiTe
Y	Luminance
2H	2 Hour (SP)
4H	4 Hour (LP)
6H	6 Hour (SLP/EP)

AKAI

MODEL VS-G405EA/EDG

SCHEMATIC DIAGRAMS
AND PC BOARDS

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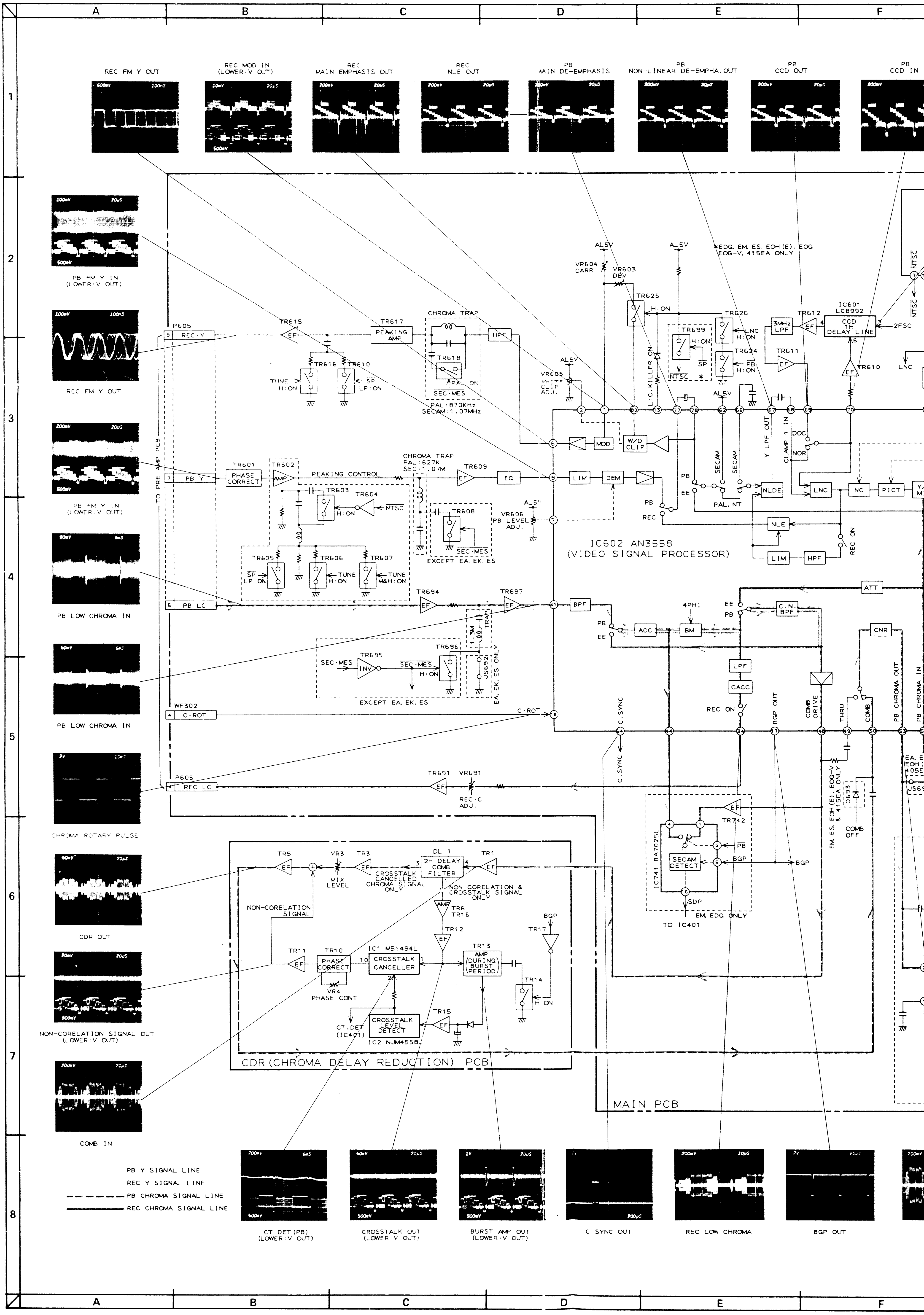
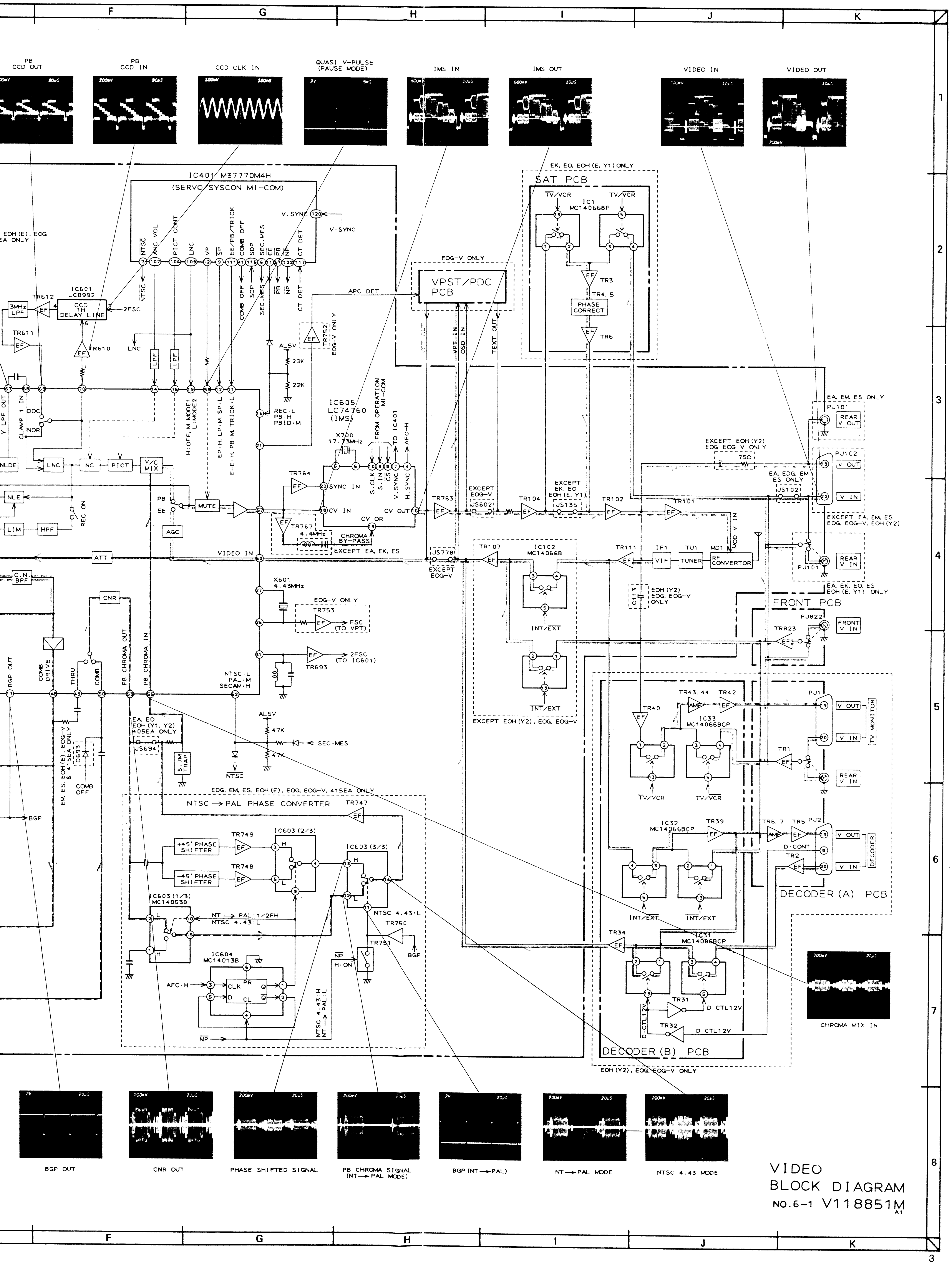
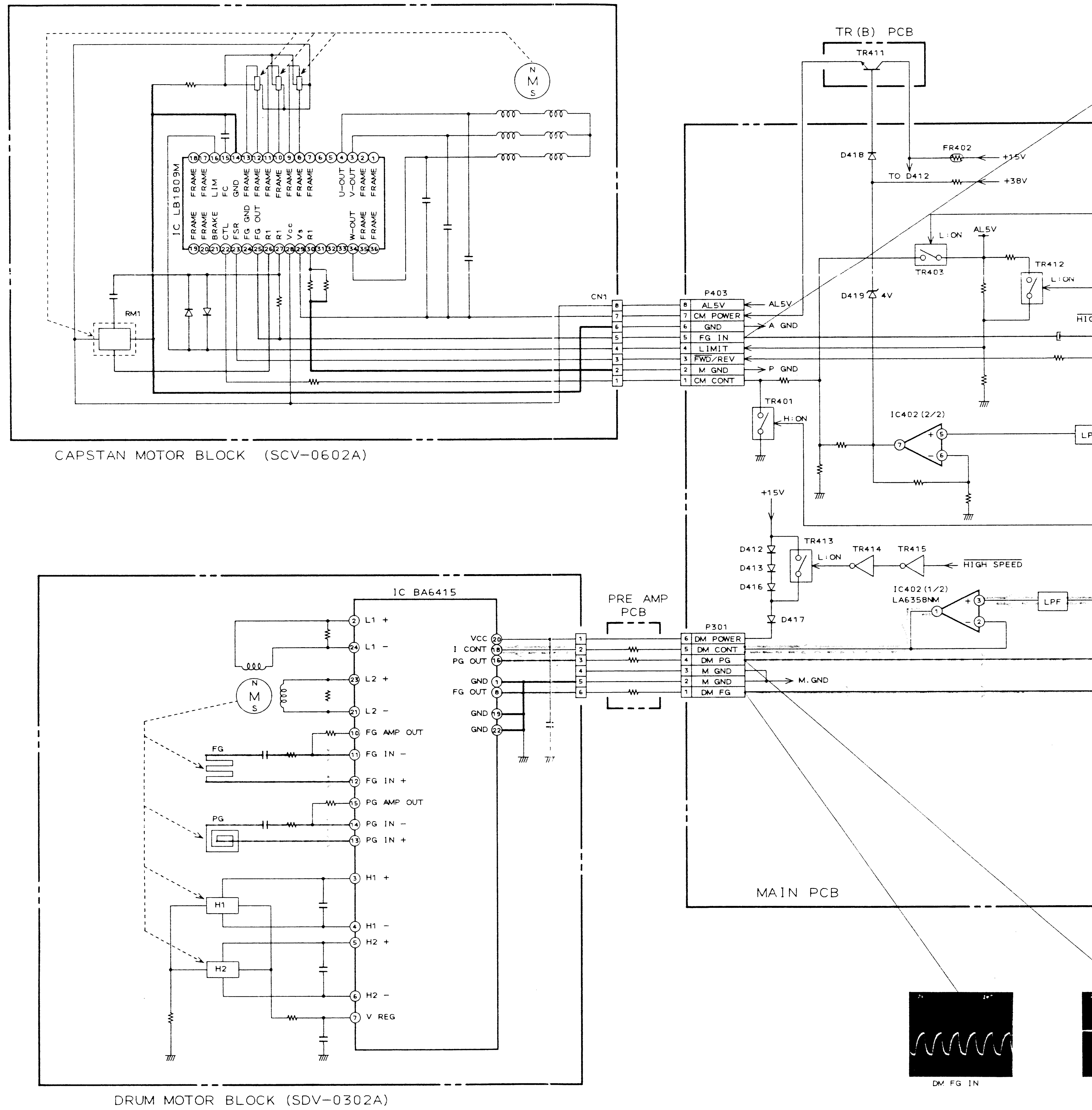
III. INFORMATION OF ICs 40

Use these schematic diagrams and PC boards together with the provided service manual.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
REC FM Y OUT
REC MOD IN (LOWER:V OUT)
REC MAIN EMPHASIS OUT
REC NLE OUT
PB MAIN DE-EMPHASIS
PB NON-LINEAR DE-EMPHA. OUT
PB CCD OUT
PB CCD IN
PB FM Y IN (LOWER:V OUT)
REC FM Y OUT
PB FM Y IN (LOWER:V OUT)
PB LOW CHROMA IN
PB LOW CHROMA IN
CHROMA ROTARY PULSE
CDR OUT
NON-CORELATION SIGNAL OUT (LOWER:V OUT)
COMB IN
CT DET (PB) (LOWER:V OUT)
CROSSTALK OUT (LOWER:V OUT)
BURST AMP OUT (LOWER:V OUT)
C SYNC OUT
REC LOW CHROMA
BGP OUT
P605
REC·Y
PB Y
PB LC
WF302
C·ROT
P605
REC LC
TO PRE AMP PCB
TR615
EF
TR617
PEAKING AMP
CHROMA TRAP
TR618
SEC·MES
PAL: ON
PAL: 870KHz
SECAM: 1.07MHz
HPF
TR616
TR610
TUNE H:ON
SP LP:ON
TR601
PHASE CORRECT
TR602
AMP
PEAKING CONTROL
TR603
TR604
H:ON
NTSC
CHROMA TRAP
PAL: 627K
SEC: 1.07M
TR609
EF
EQ
TR608
SEC·MES
EXCEPT EA, EK, ES
TR605
SP LP:ON
TR606
TUNE H:ON
TR607
TUNE M&H:ON
TR694
TR697
EF
1.5M
TRAP
TR695
SEC·MES
INV
SEC·MES
H:ON
TR696
JS692
EA, EK, ES ONLY
EXCEPT EA, EK, ES
C·ROT
TR691
VR691
REC·C ADJ.
AL5V
VR604 CARR
VR603 DEV
AL5V
VR605 WHITE CLIP ADJ.
TR625
H:ON
L:C.KILLER ON
TR699
H:ON
SP
INTSC
*
*EDG, EM, ES, EOH (E), EOG EOG-V, 415EA ONLY
TR626
LNC H:ON
TR624
PB H:ON
3MHz LPF
TR612
EF
TR611
EF
IC601 LC8992
CCD 1H DELAY LINE
2FSC
TR610
EF
LNC
NTSC
MOD
W/D CLIP
LIM
DEM
AL5V
VR606 PB LEVEL ADJ.
IC602 AN3558
(VIDEO SIGNAL PROCESSOR)
SECAM
SECAM
Y LPF OUT
CLAMP 1 IN
DOC
NOR
PB
EE
PB
REC
PAL, NT
NLDE
LNC
NC
PICT
NLE
LIM
HPF
REC ON
ATT
BPF
EE
PB
PB
EE
ACC
4PH1
BM
C.N. BPF
CNR
LPF
CACC
REC ON
C.SYNC
C.SYNC
BGP OUT
COMB DRIVE
THRU
COMB
PB CHROMA OUT
PB CHROMA IN
EA, E
EOH (
405E
JS69
EM, ES, EOH(E), EOG-V & 415EA ONLY
D693
COMB OFF
TR742
EF
IC741 BA7025L
SECAM DETECT
PB
BGP
BGP
SDP
EM, EDG ONLY
TO IC401
TR5
EF
VR3
MIX LEVEL
TR3
EF
DL 1
2H DELAY COMB FILTER
TR1
EF
CROSSTALK CANCELLED CHROMA SIGNAL ONLY
NON CORELATION & CROSSTALK SIGNAL ONLY
NON-CORELATION SIGNAL
AMP
TR6
TR16
TR12
EF
BGP
TR17
TR11
EF
TR10
PHASE CORRECT
VR4
PHASE CONT
IC1 M51494L
CROSSTALK CANCELLER
TR13
AMP (DURING BURST PERIOD)
TR14
H ON
CT·DET (IC401)
CROSSTALK LEVEL DETECT
IC2 NJM4558L
TR15
EF
CDR (CHROMA DELAY REDUCTION) PCB
MAIN PCB
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE
600mV
100nS
10mV
20µS
500mV
200mV
20µS
100mV
20µS
500mV
100mV
100nS
60mV
5mS
2V
10mS
50mV
20mV
2V
200µS
10µS

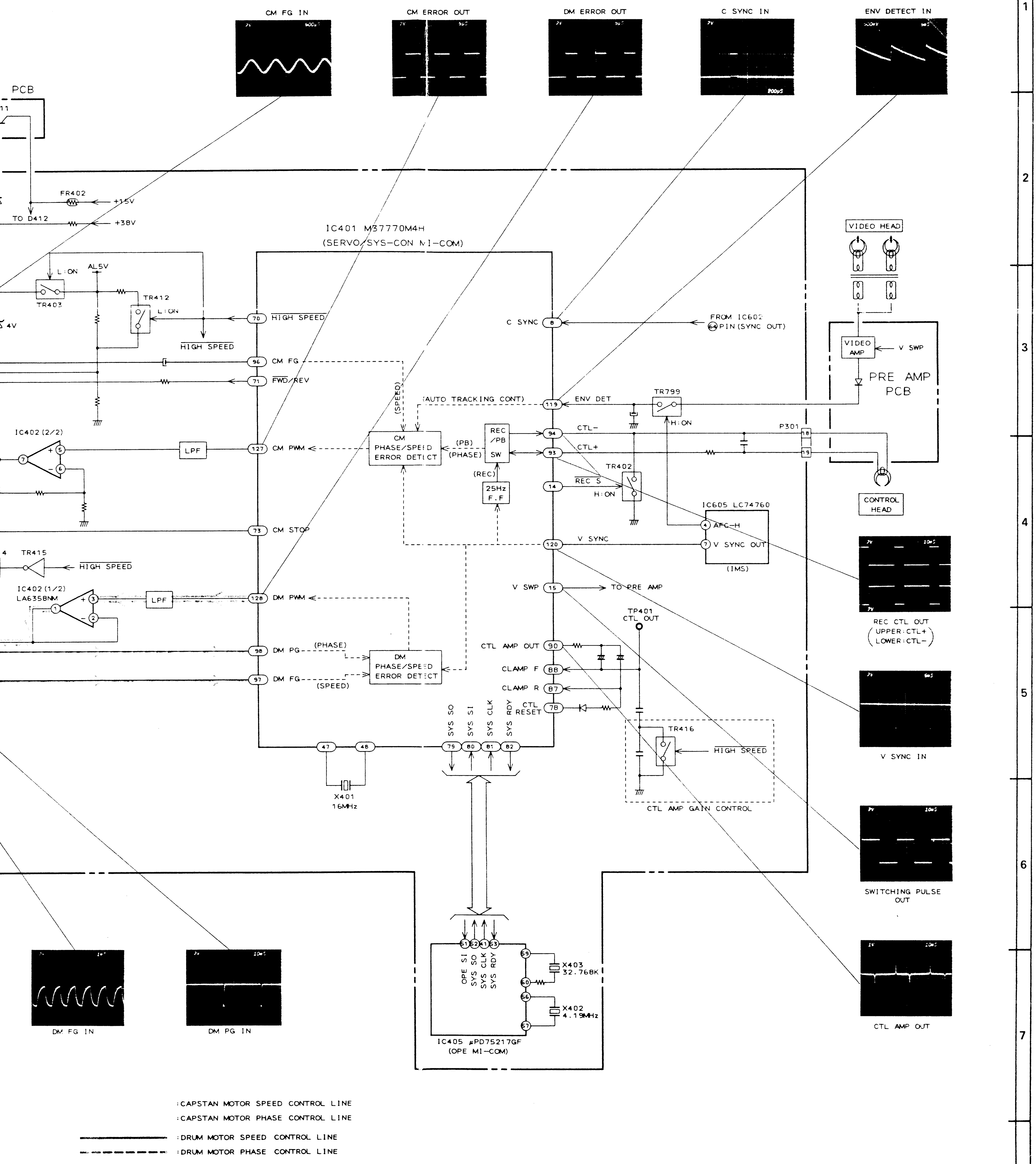

F
G
H
I
J
K
1
2
3
4
5
6
7
8
PB CCD OUT
PB CCD IN
CCD CLK IN
QUASI V-PULSE (PAUSE MODE)
IMS IN
IMS OUT
VIDEO IN
VIDEO OUT
IC401 M37770M4H
(SERVO/SYSCON MI-COM)
V. SYNC
V·SYNC
NTSC
ANC VOL
PICT CONT
LNC
VP
SP
EE/PB/TRICK
COMB OFF
SDP
SEC.MES
EE
PB
NP
CT DET
EOH (E), EOG
EA ONLY
IC601 LC8992
CCD 1H DELAY LINE
2FSC
TR612
3MHz LPF
TR611
TR610
LPF
APC DET
EOG-V ONLY
VPST/PDC PCB
VPT IN
OSD IN
TEXT OUT
TR752
EOG-V ONLY
AL5V
22K
REC:L
PB:H
PBID:M
H:OFF, M:MODE1
L:MODE2
EP:H, LP:M, SP:L
E-E:H, PB:M, TRICK:L
Y LPF OUT
CLAMP 1 IN
DOC
NOR
NLDE
LNC
NC
PICT
Y/C MIX
NLE
LIM
HPF
REC ON
PB
EE
MUTE
AGC
ATT
VIDEO IN
IC605 LC74760 (IMS)
X700 17.73MHz
FROM OPERATION MI-COM
TO IC401
AFC-H
S.CLK
S.IN
CS
V.SYNC
H.SYNC
TR764
SYNC IN
CV IN
CV OUT
CV OR
TR767
4.4MHz
CHROMA BY-PASS
EXCEPT EA, EK, ES
TR763
EXCEPT EOG-V
JS602
TR104
EXCEPT EK, EO EOH (E, Y1)
JS135
TR102
TR101
JS778
EXCEPT EOG-V
TR107
IC102 MC14066B
INT/EXT
EXCEPT EOH (Y2), EOG, EOG-V
TR111
IF1 VIF
TU1 TUNER
MD1 RF CONVERTOR
MOD V IN
C113
EOH (Y2) EOG, EOG-V ONLY
EK, EO, EOH (E, Y1) ONLY
SAT PCB
TV/VCR
IC1 MC14066BP
TR3
TR4, 5
PHASE CORRECT
TR6
EA, EM, ES ONLY
PJ101
REAR V OUT
EXCEPT EOH (Y2) EOG, EOG-V ONLY
75Ω
PJ102
V OUT
EA, EDG, EM ES ONLY
JS102
V IN
EXCEPT EA, EM, ES EOG, EOG-V, EOH (Y2)
REAR V IN
EA, EK, EO, ES EOH (E, Y1) ONLY
FRONT PCB
PJ822
TR823
FRONT V IN
C.N. BPF
CNR
X601 4.43MHz
EOG-V ONLY
TR753
FSC (TO VPT)
2FSC (TO IC601)
TR693
NTSC:L
PAL:M
SECAM:H
BGP OUT
COMB DRIVE
THRU
COMB
PB CHROMA OUT
PB CHROMA IN
EA, EO EOH (Y1, Y2) 405EA ONLY
JS694
5.7M TRAP
47K
SEC·MES
NTSC
EM, ES, EOH (E), EOG-V & 415EA ONLY
D693
COMB OFF
BGP
EDG, EM, ES, EOH (E), EOG, EOG-V, 415EA ONLY
NTSC → PAL PHASE CONVERTER
TR747
TR749
+45° PHASE SHIFTER
TR748
-45° PHASE SHIFTER
IC603 (2/3)
IC603 (3/3)
IC603 (1/3) MC14053B
NT → PAL:1/2FH
NTSC 4.43:L
NTSC 4.43:L
TR750
TR751
NP
H:ON
BGP
IC604 MC14013B
AFC·H
CLK
PR
CL
D
Q
NP
NTSC 4.43:H
NT → PAL:L
TR43, 44
TR42
TR40
AMP
IC33 MC14066BCP
PJ1
V OUT
V IN
TV MONITOR
TR1
REAR V IN
TV/VCR
IC32 MC14066BCP
TR39
TR6, 7
TR5
PJ2
D-CONT
TR2
DECODER
INT/EXT
DECODER (A) PCB
TR34
IC31 MC14066BCP
TR31
D CTL12V
D-CTL12V
TR32
DECODER (B) PCB
EOH (Y2), EOG, EOG-V ONLY
CHROMA MIX IN
BGP OUT
CNR OUT
PHASE SHIFTED SIGNAL
PB CHROMA SIGNAL (NT → PAL MODE)
BGP (NT → PAL)
NT → PAL MODE
NTSC 4.43 MODE

VIDEO
BLOCK DIAGRAM
NO.6-1 V118851M A1

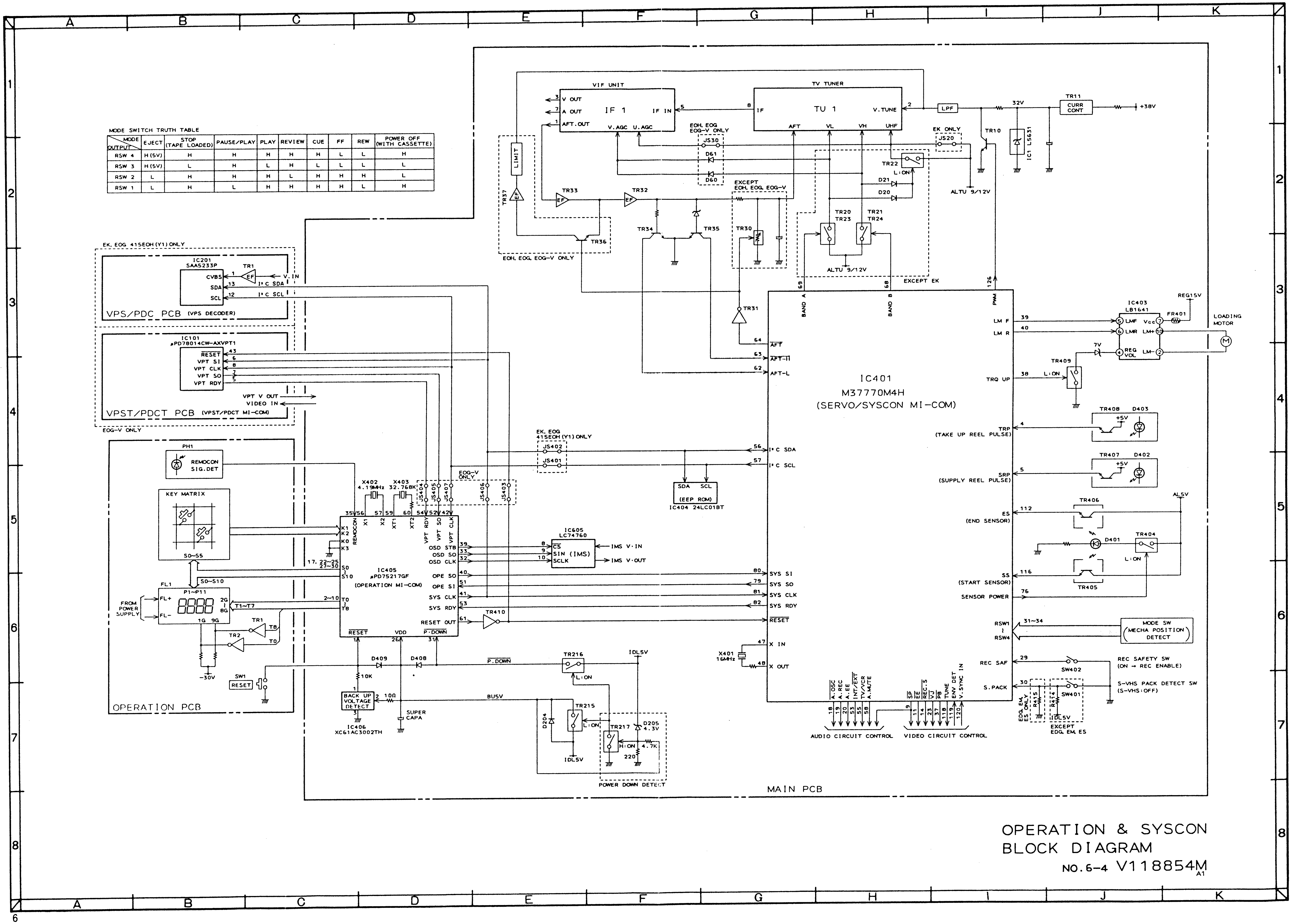

TR(B) PCB
TR411
D418
FR402
+15V
TO D412
+38V
L:ON
AL5V
TR403
TR412
L:ON
D419 4V
IC LB1809M
FRAME
FRAME
LIM
FC
GND
FG GND
FG OUT
R1
Vcc
Vs
U-OUT
V-OUT
W-OUT
BRAKE
CTL
FSR
RM1
CN1
P403
AL5V
CM POWER
GND
FG IN
LIMIT
FWD/REV
M GND
CM CONT
A GND
P GND
TR401
H:ON
IC402(2/2)
LPF
CAPSTAN MOTOR BLOCK (SCV-0602A)
+15V
D412
D413
D416
D417
TR413
L:ON
TR414
TR415
HIGH SPEED
IC402(1/2)
LA6358NM
LPF
IC BA6415
L1 +
L1 -
L2 +
L2 -
FG AMP OUT
FG IN -
FG IN +
PG AMP OUT
PG IN -
PG IN +
H1 +
H1 -
H2 +
H2 -
V REG
VCC
I CONT
PG OUT
GND
FG OUT
FG
PG
H1
H2
PRE AMP PCB
P301
DM POWER
DM CONT
DM PG
M GND
DM FG
M.GND
MAIN PCB
DRUM MOTOR BLOCK (SDV-0302A)
DM FG IN

NOTE: PHOTOGRAPHS EXCEPT [REC CTL OUT]
WERE TAKEN DURING PB MODE.
EXCEPT [REC CTL OUT], PHOTOGRAPH'S
SECOND LINE FROM THE BOTTOM IS DC 0V.

:CAP
:CAP
:DRU
:DRU


F
G
H
I
J
K
1
2
3
4
5
6
7
8
CM FG IN
CM ERROR OUT
DM ERROR OUT
C SYNC IN
ENV DETECT IN
PCB
FR402
+15V
TO D412
+38V
IC401 M37770M4H
(SERVO/SYS-CON MI-COM)
L:ON
AL5V
TR403
TR412
L:ON
4V
70 HIGH SPEED
HIGH SPEED
96 CM FG
71 FWD/REV
(SPEED)
(AUTO TRACKING CONT)
IC402 (2/2)
LPF
127 CM PWM
CM PHASE/SPEED ERROR DETECT
(PB)
(PHASE)
REC /PB
SW
(REC)
25Hz F.F
73 CM STOP
TR415
HIGH SPEED
IC402 (1/2)
LA6358NM
LPF
128 DM PWM
98 DM PG
(PHASE)
DM PHASE/SPEED ERROR DETECT
97 DM FG
(SPEED)
47
48
X401
16MHz
SYS SO
SYS SI
SYS CLK
SYS RDY
79
80
81
82
C SYNC
8
FROM IC602
64 PIN (SYNC OUT)
119 ENV DET
TR799
H:ON
94 CTL−
93 CTL+
P301
18
19
TR402
14 REC S
H:ON
IC605 LC74760
4 AFC-H
7 V SYNC OUT
(IMS)
120 V SYNC
V SWP 15
TO PRE AMP
TP401
CTL OUT
CTL AMP OUT 90
CLAMP F 88
CLAMP R 87
CTL RESET 78
TR416
HIGH SPEED
CTL AMP GAIN CONTROL
VIDEO HEAD
VIDEO AMP
V SWP
PRE AMP PCB
CONTROL HEAD
REC CTL OUT
(UPPER:CTL+
LOWER:CTL−)
V SYNC IN
SWITCHING PULSE OUT
CTL AMP OUT
OPE SI
SYS SO
SYS CLK
SYS RDY
51
52
41
53
59
60
X403
32.768K
56
57
X402
4.19MHz
IC405 µPD75217GF
(OPE MI-COM)
DM FG IN
DM PG IN
:CAPSTAN MOTOR SPEED CONTROL LINE
:CAPSTAN MOTOR PHASE CONTROL LINE
:DRUM MOTOR SPEED CONTROL LINE
:DRUM MOTOR PHASE CONTROL LINE

SERVO
BLOCK DIAGRAM
NO.6-2 V118853M
A1

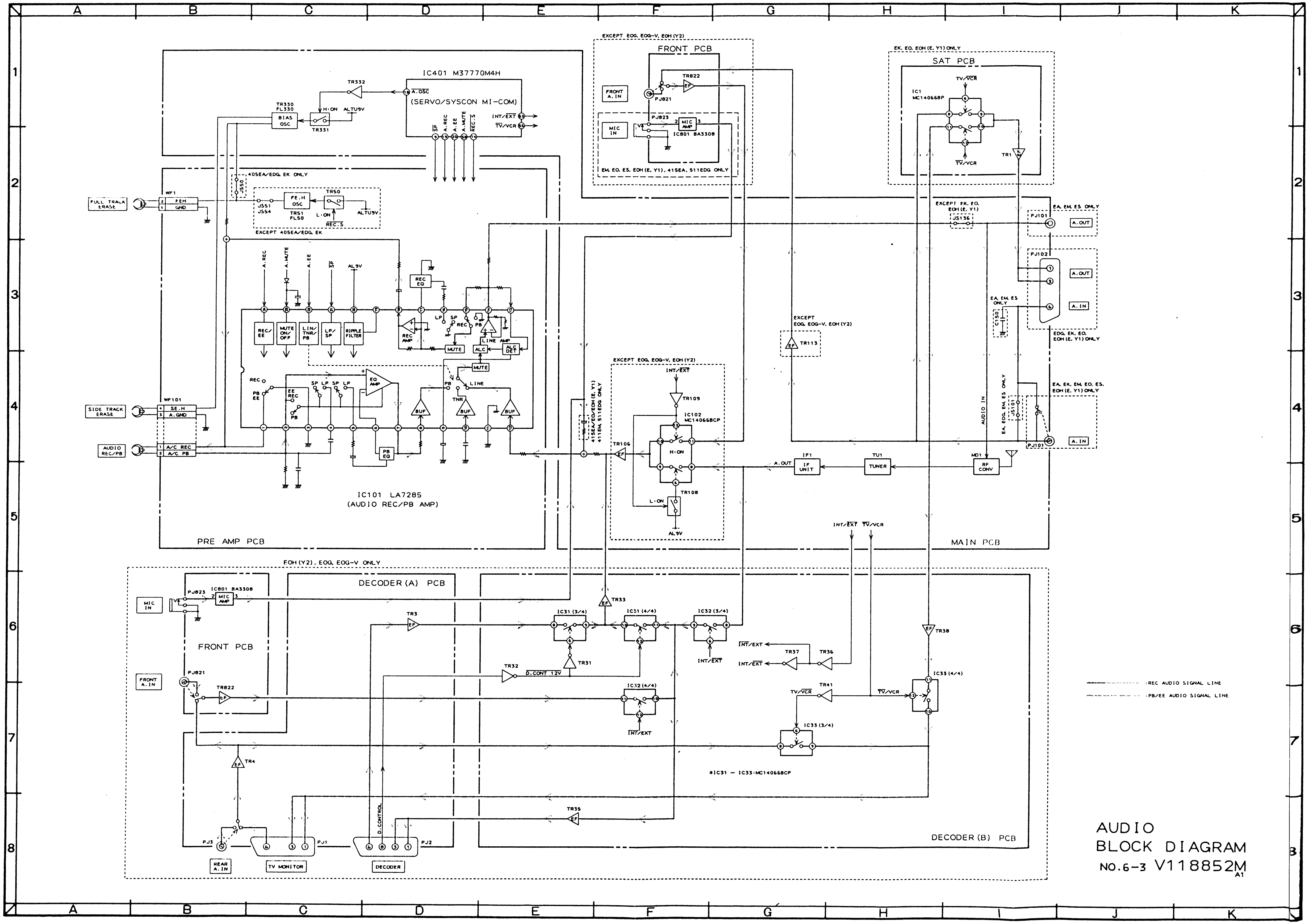

VIF UNIT
IF 1
V OUT
A OUT
AFT.OUT
IF IN
V.AGC
U.AGC
TV TUNER
TU 1
IF
AFT
VL
VH
UHF
V.TUNE
LPF
32V
TR11
CURR CONT
+38V
TR10
IC1 L5631
EK ONLY
JS520
TR22
L:ON
D21
D20
ALTU 9/12V
EOH, EOG
EOG-V ONLY
JS30
D61
D60
EXCEPT
EOH, EOG, EOG-V
LIMIT
TR37
EF
TR33
TR32
TR34
TR35
TR30
TR36
EOH, EOG, EOG-V ONLY
TR20
TR23
TR21
TR24
EXCEPT EK
TR31
EK, EOG 415EOH (Y1) ONLY
IC201
SAA5233P
TR1
CVBS
SDA
SCL
V.IN
I²C SDA
I²C SCL
VPS/PDC PCB (VPS DECODER)
IC101
μPD78014CW-AXVPT1
RESET
VPT SI
VPT CLK
VPT SO
VPT RDY
VPT V OUT
VIDEO IN
VPST/PDCT PCB (VPST/PDCT MI-COM)
EOG-V ONLY
PH1
REMOCON SIG.DET
KEY MATRIX
S0~S5
FL1
P1~P11
FL+
FL-
FROM POWER SUPPLY
2G
8G
1G 9G
T1~T7
TR1
TR2
T8
T0
-30V
SW1
RESET
OPERATION PCB
X402 4.19MHz
X403 32.768K
JS404
JS405
JS407
JS406
JS403
EOG-V ONLY
IC405
μPD75217GF
(OPERATION MI-COM)
REMOCON
X1
X2
XT1
XT2
VPT RDY
VPT SO
VPT CLK
K1
K2
K0
K3
S0
S10
T0
T8
OSD STB
OSD SO
OSD CLK
OPE SO
OPE SI
SYS CLK
SYS RDY
RESET OUT
RESET
VDD
P.DOWN
17, 22~25, 27~30
S0~S10
2~10
IC605
LC74760
CS
SIN (IMS)
SCLK
IMS V·IN
IMS V·OUT
EK, EOG 415EOH (Y1) ONLY
JS402
JS401
IC404 24LC018T
SDA
SCL
(EEP ROM)
TR410
D409
D408
10K
BACK UP VOLTAGE DETECT
IC406
XC61AC3002TH
10Ω
SUPER CAPA
BUS5V
P.DOWN
TR216
L:ON
IDL5V
TR215
D204
TR217
H:ON
D205 4.3V
4.7K
220
POWER DOWN DETECT
MAIN PCB
IC401
M37770M4H
(SERVO/SYSCON MI-COM)
BAND A
BAND B
PWM
AFT
AFT-H
AFT-L
I²C SDA
I²C SCL
SYS SI
SYS SO
SYS CLK
SYS RDY
RESET
X401 16MHz
X IN
X OUT
A.OSC
A.REC
A.EE
INT/EXT
TV/VCR
A.MUTE
SP
EE
REC.S
VJ
PB
TUNE
ENV DET
V.SYNC IN
AUDIO CIRCUIT CONTROL
VIDEO CIRCUIT CONTROL
LM F
LM R
TRQ UP
TRP (TAKE UP REEL PULSE)
SRP (SUPPLY REEL PULSE)
ES (END SENSOR)
SS (START SENSOR)
SENSOR POWER
RSW1 ~ RSW4
REC SAF
S.PACK
31~34
IC403
LB1641
LMF
LMR
REG VOL
Vcc
LM+
LM-
REG15V
FR401
LOADING MOTOR
7V
TR409
L:ON
TR408
D403
TR407
D402
+5V
TR406
AL5V
D401
TR404
L:ON
TR405
MODE SW (MECHA POSITION DETECT)
SW402
REC SAFETY SW (ON → REC ENABLE)
SW401
S-VHS PACK DETECT SW (S-VHS:OFF)
EDG, EM, ES ONLY
EXCEPT EDG, EM, ES
IDL5V
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

MODE SWITCH TRUTH TABLE

MODE / OUTPUT	EJECT	STOP (TAPE LOADED)	PAUSE/PLAY	PLAY	REVIEW	CUE	FF	REW	POWER OFF (WITH CASSETTE)
RSW 4	H (5V)	H	H	H	H	H	L	L	H
RSW 3	H (5V)	L	H	L	H	L	L	L	L
RSW 2	L	H	H	H	L	H	H	H	L
RSW 1	L	H	L	H	H	H	H	L	H

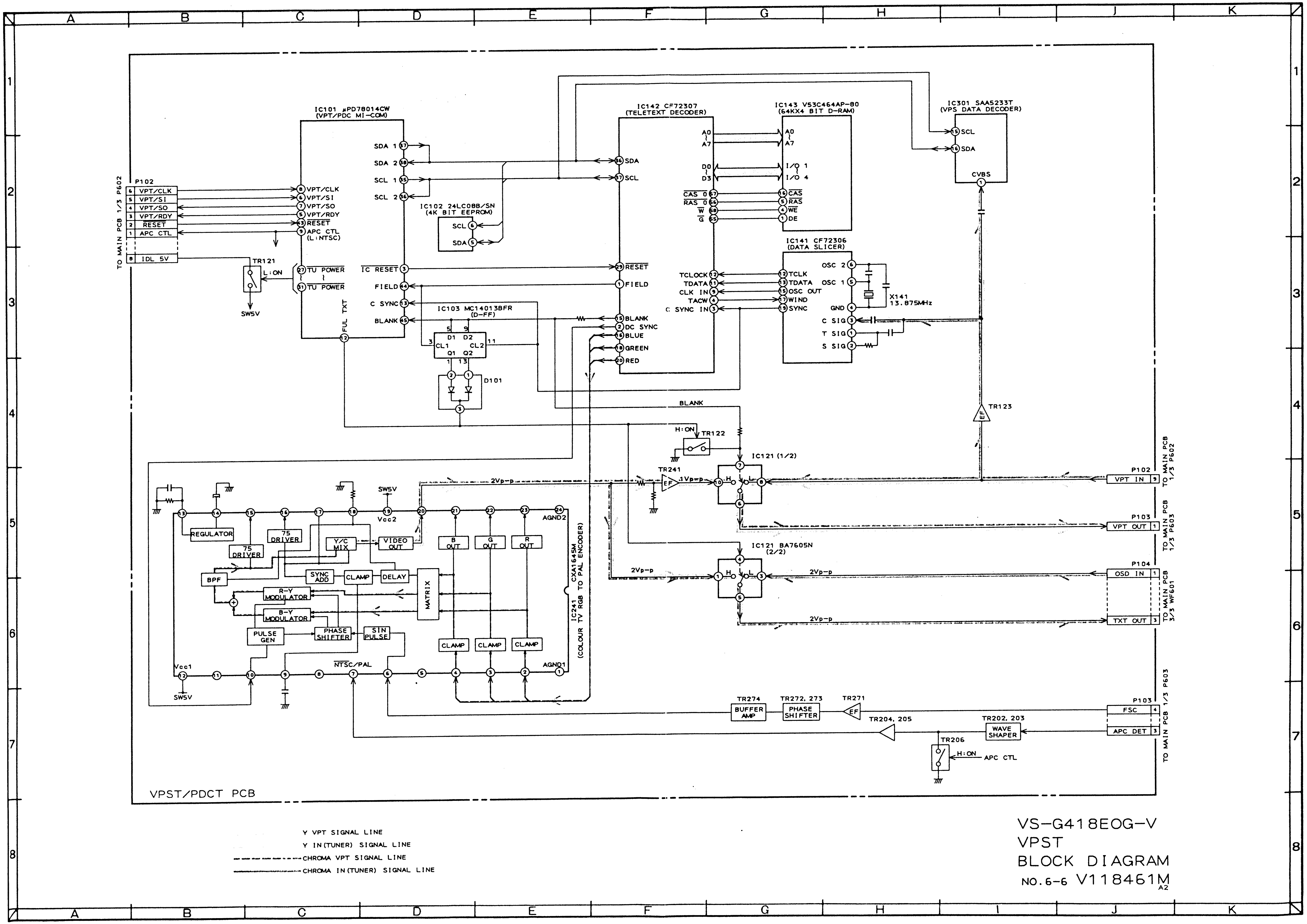
OPERATION & SYSCON
BLOCK DIAGRAM

NO.6-4 V118854M A1


IC401 M37770M4H
(SERVO/SYSCON MI-COM)
A.OSC
SP
A.REC
A.EE
A.MUTE
REC.S
INT/EXT
TV/VCR
TR332
TR330
FL330
BIAS OSC
H: ON
ALTU9V
TR331
405EA/EDG, EK ONLY
JS50
FULL TRACK ERASE
WF1
FEH
GND
JS51
JS54
FE.H OSC
TR50
TR51
FL50
L: ON
REC.S
EXCEPT 405EA/EDG, EK
A.REC
A.MUTE
A.EE
SP
AL9V
REC EQ
REC/EE
MUTE ON/OFF
LIN/TNR/PB
LP/SP
RIPPLE FILTER
REC AMP
LP
SP
REC
PB
LINE AMP
MUTE
ALC
ALC DET
REC
PB EE
EE REC
PB
SP LP SP LP
EQ AMP
TNR
LINE
BUF
PB EQ
SIDE TRACK ERASE
WF101
SE.H
A.GND
AUDIO REC/PB
A/C REC
A/C PB
IC101 LA7285
(AUDIO REC/PB AMP)
PRE AMP PCB
EXCEPT EOG, EOG-V, EOH (Y2)
FRONT PCB
FRONT A.IN
PJ821
TR822
EF
MIC IN
PJ823
MIC AMP
IC801 BA3308
EM, EO, ES, EOH (E, Y1), 415EA, 511EDG ONLY
EXCEPT EOG, EOG-V, EOH (Y2)
TR113
415EA/EO/EOH (E, Y1)
411EM, 511EDG ONLY
INT/EXT
TR109
IC102
MC14066BCP
H: ON
L: ON
TR108
AL9V
TR106
A.OUT
IF1
IF UNIT
TU1
TUNER
MD1
RF CONV
EK, EO, EOH (E, Y1) ONLY
SAT PCB
TV/VCR
IC1
MC14066BP
TR1
EXCEPT EK, EO, EOH (E, Y1)
JS136
EA, EM, ES ONLY
PJ101
A.OUT
PJ102
A.OUT
A.IN
EA, EM, ES ONLY
C150
EDG, EK, EO, EOH (E, Y1) ONLY
AUDIO IN
EA, EDG, EM, ES ONLY
JS101
EA, EK, EM, EO, ES, EOH (E, Y1) ONLY
PJ101
A.IN
MAIN PCB
INT/EXT TV/VCR
EOH (Y2), EOG, EOG-V ONLY
DECODER (A) PCB
MIC IN
PJ823
IC801 BA3308
MIC AMP
FRONT PCB
FRONT A.IN
PJ821
TR822
EF
TR3
TR33
IC31 (3/4)
IC31 (4/4)
IC32 (3/4)
TR31
TR32
D.CONT 12V
IC32 (4/4)
INT/EXT
INT/EXT
TR37
TR36
INT/EXT
TR38
IC33 (4/4)
TR41
TV/VCR
TV/VCR
IC33 (3/4)
*IC31 – IC33: MC14066BCP
TR4
TR35
D.CONTROL
PJ3
PJ1
PJ2
REAR A.IN
TV MONITOR
DECODER
DECODER (B) PCB
: REC AUDIO SIGNAL LINE
: PB/EE AUDIO SIGNAL LINE
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8

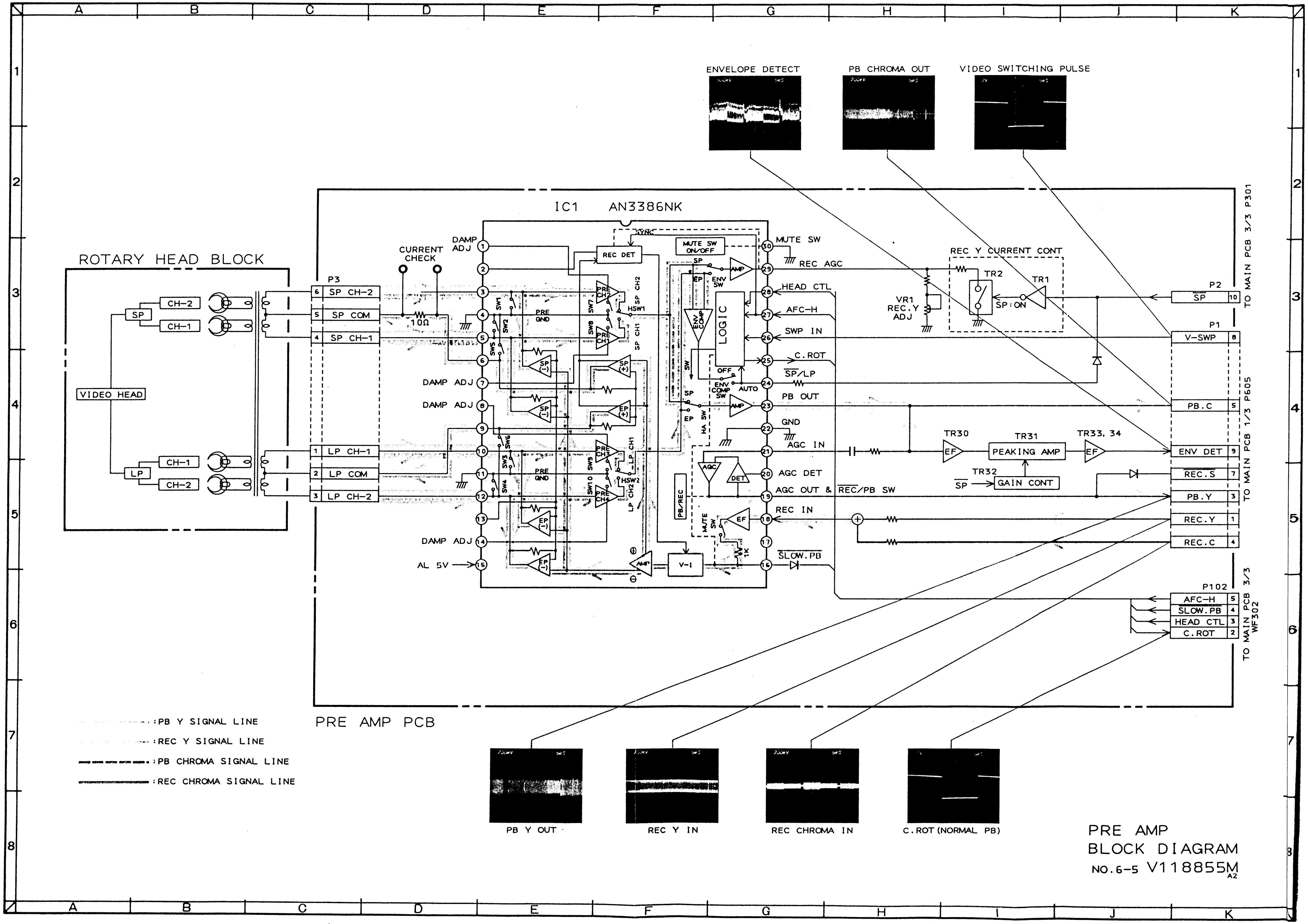
AUDIO
BLOCK DIAGRAM

NO.6-3 V118852M
A1


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
IC101 μPD78014CW
(VPT/PDC MI-COM)
SDA 1 37
SDA 2 38
SCL 1 35
SCL 2 36
VPT/CLK 8
VPT/SI 6
VPT/SO 7
VPT/RDY 5
RESET 43
APC CTL 9 (L:NTSC)
TU POWER 27 ~ 31
IC RESET 3
FIELD 44
C SYNC 13
BLANK 45
FUL TXT 12
TO MAIN PCB 1/3 P602
P102
6 VPT/CLK
5 VPT/SI
4 VPT/SO
3 VPT/RDY
2 RESET
1 APC CTL
8 IDL 5V
TR121
L:ON
SW5V
IC102 24LC08B/SN
(4K BIT EEPROM)
SCL 6
SDA 5
IC103 MC14013BFR
(D-FF)
D1 D2
CL1 CL2
Q1 Q2
D101
IC142 CF72307
(TELETEXT DECODER)
SDA 56
SCL 57
RESET 29
FIELD 1
BLANK 15
DC SYNC 2
BLUE 16
GREEN 18
RED 20
A0 ~ A7
D0 ~ D3
CAS 0 67
RAS 0 66
W 68
G 65
TCLOCK 12
TDATA 11
CLK IN 9
TACW 4
C SYNC IN 3
IC143 V53C464AP-80
(64KX4 BIT D-RAM)
A0 ~ A7
I/O 1 ~ I/O 4
CAS 16
RAS 5
WE 4
DE 1
IC141 CF72306
(DATA SLICER)
TCLK 12
TDATA 13
OSC OUT 15
WIND 17
SYNC 13
OSC 2 6
OSC 1 5
GND 4
C SIG 3
T SIG 1
S SIG 2
X141
13.875MHz
IC301 SAA5233T
(VPS DATA DECODER)
SCL 15
SDA 16
CVBS 1
TR123
EF
BLANK
H:ON
TR122
IC121 (1/2)
TR241
EF
1Vp-p
2Vp-p
H
L
P102
VPT IN 9
TO MAIN PCB 1/3 P602
P103
VPT OUT 1
TO MAIN PCB 1/3 P603
IC121 BA7605N
(2/2)
P104
OSD IN 1
TXT OUT 3
TO MAIN PCB 3/3 WF601
SW5V
Vcc2
AGND2
REGULATOR
75 DRIVER
75 DRIVER
Y/C MIX
VIDEO OUT
B OUT
G OUT
R OUT
BPF
SYNC ADD
CLAMP
DELAY
MATRIX
R-Y MODULATOR
B-Y MODULATOR
PULSE GEN
PHASE SHIFTER
SIN PULSE
CLAMP
CLAMP
CLAMP
IC241 CXA1645M
(COLOUR TV RGB TO PAL ENCODER)
Vcc1
SW5V
NTSC/PAL
AGND1
TR274
BUFFER AMP
TR272, 273
PHASE SHIFTER
TR271
EF
TR204, 205
TR202, 203
WAVE SHAPER
TR206
H:ON
APC CTL
P103
FSC 4
APC DET 3
TO MAIN PCB 1/3 P603
VPST/PDCT PCB

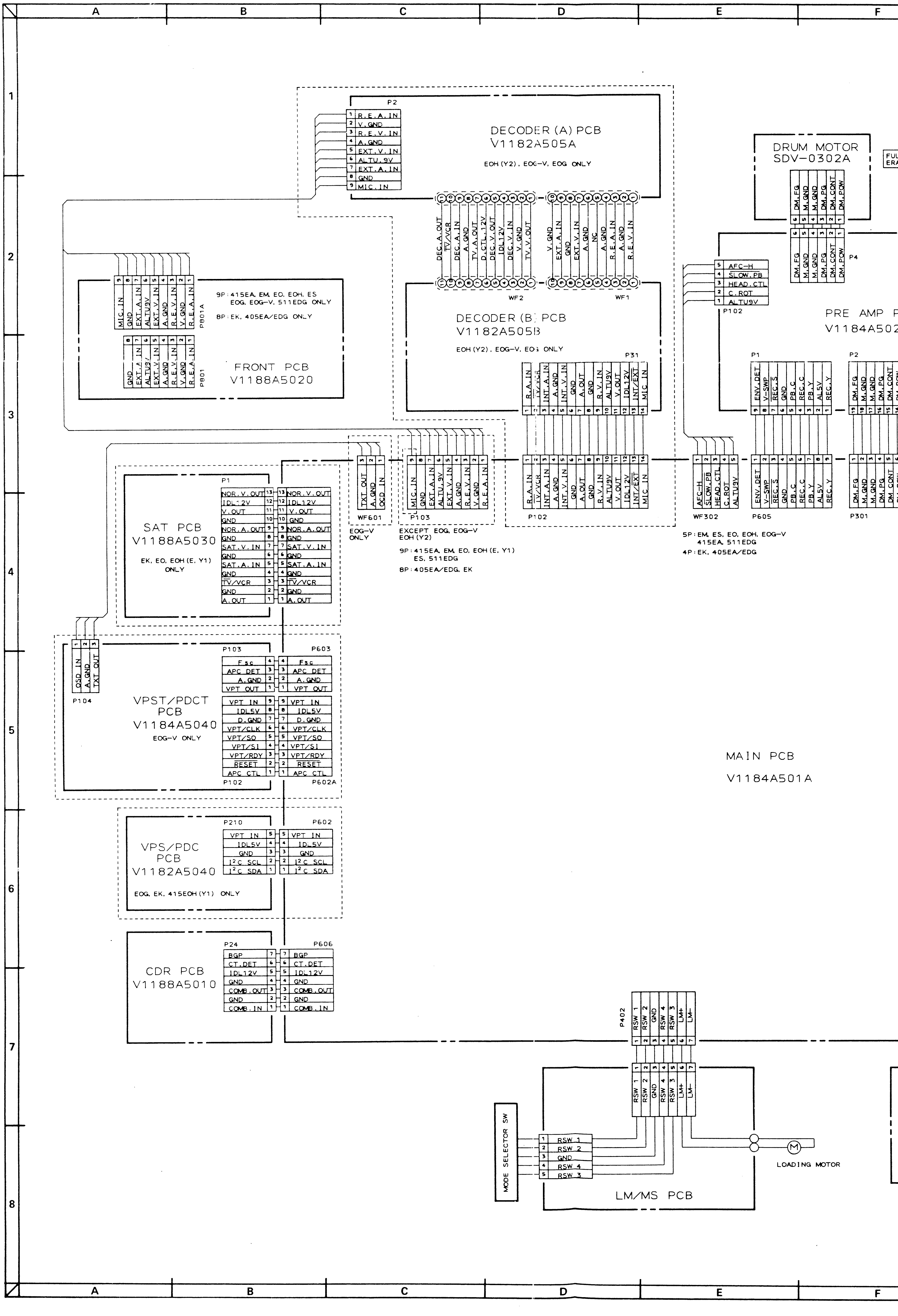
Y VPT SIGNAL LINE
Y IN(TUNER) SIGNAL LINE
CHROMA VPT SIGNAL LINE
CHROMA IN(TUNER) SIGNAL LINE

VS-G418EOG-V
VPST
BLOCK DIAGRAM
NO.6-6 V118461M
A2

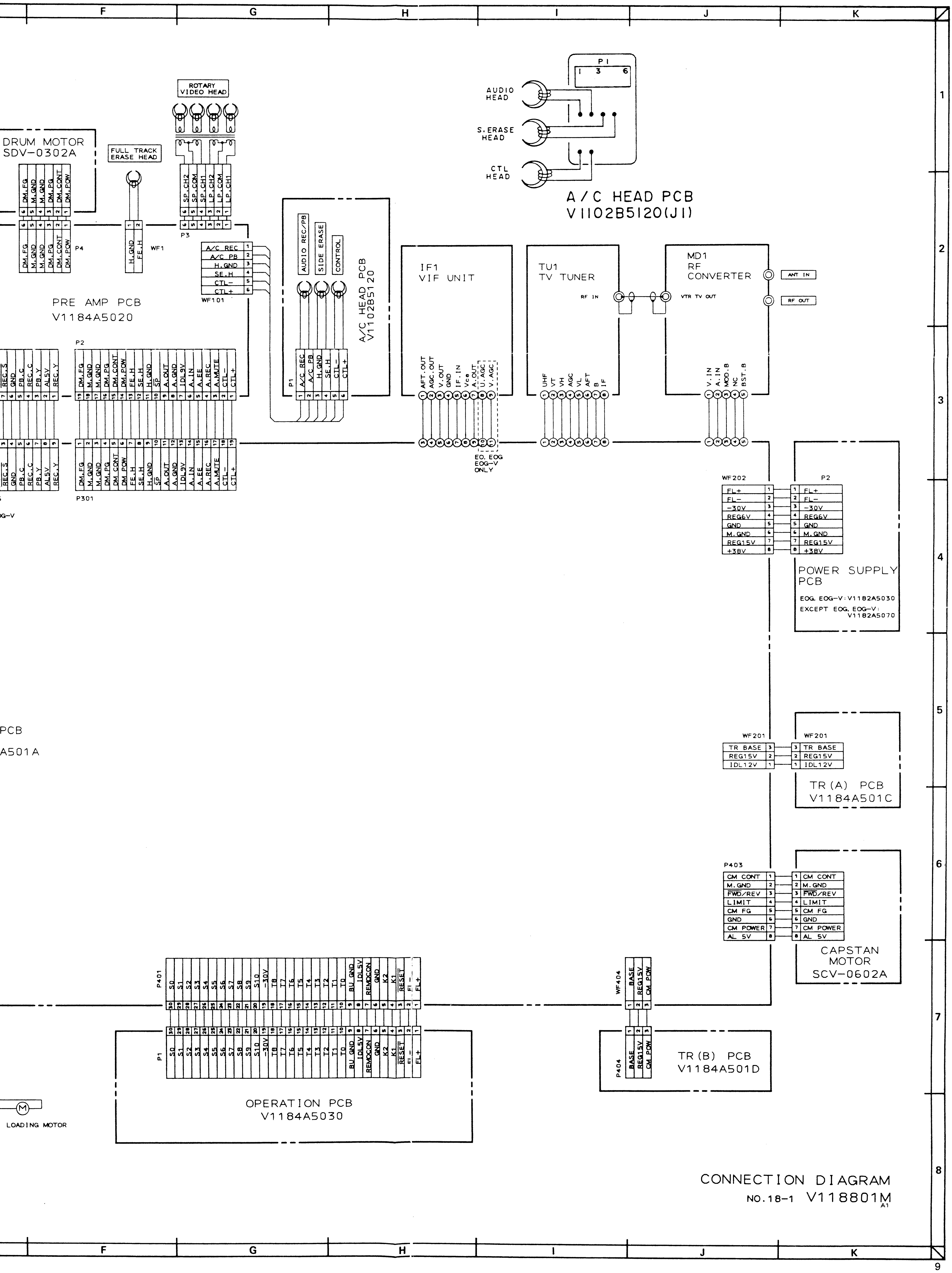

A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
ENVELOPE DETECT
PB CHROMA OUT
VIDEO SWITCHING PULSE
ROTARY HEAD BLOCK
CH-2
SP
CH-1
VIDEO HEAD
CH-1
LP
CH-2
P3
6 SP CH-2
5 SP COM
4 SP CH-1
1 LP CH-1
2 LP COM
3 LP CH-2
CURRENT CHECK
10Ω
IC1 AN3386NK
DAMP ADJ
DAMP ADJ
DAMP ADJ
DAMP ADJ
AL 5V
REC DET
MUTE SW ON/OFF
SYNC
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
PRE GND
PRE GND
PRE CH2
PRE CH1
PRE CH3
PRE CH4
SP CH2
SP CH1
HSW1
HSW2
LP CH1
LP CH2
SP (-)
SP (+)
EP (-)
EP (+)
EP (-)
EP (-)
AMP
V-I
ENV COMP
LOGIC
ENV SW
ENV COMP SW
OFF
AUTO
HA SW
AGC
DET
PB/REC
MUTE SW
EF
1X
MUTE SW
REC AGC
HEAD CTL
AFC-H
SWP IN
C.ROT
SP/LP
PB OUT
GND
AGC IN
AGC DET
AGC OUT & REC/PB SW
REC IN
SLOW.PB
REC Y CURRENT CONT
VR1 REC.Y ADJ
TR2
TR1
SP:ON
TR30
EF
TR31
PEAKING AMP
TR33, 34
EF
TR32
SP
GAIN CONT
P2
SP 10
TO MAIN PCB 3/3 P301
P1
V-SWP 8
PB.C 5
ENV DET 9
REC.S 7
PB.Y 3
REC.Y 1
REC.C 4
TO MAIN PCB 1/3 P605
P102
AFC-H 5
SLOW.PB 4
HEAD CTL 3
C.ROT 2
TO MAIN PCB 3/3 WF302
PRE AMP PCB
:PB Y SIGNAL LINE
:REC Y SIGNAL LINE
:PB CHROMA SIGNAL LINE
:REC CHROMA SIGNAL LINE
PB Y OUT
REC Y IN
REC CHROMA IN
C.ROT (NORMAL PB)

PRE AMP
BLOCK DIAGRAM

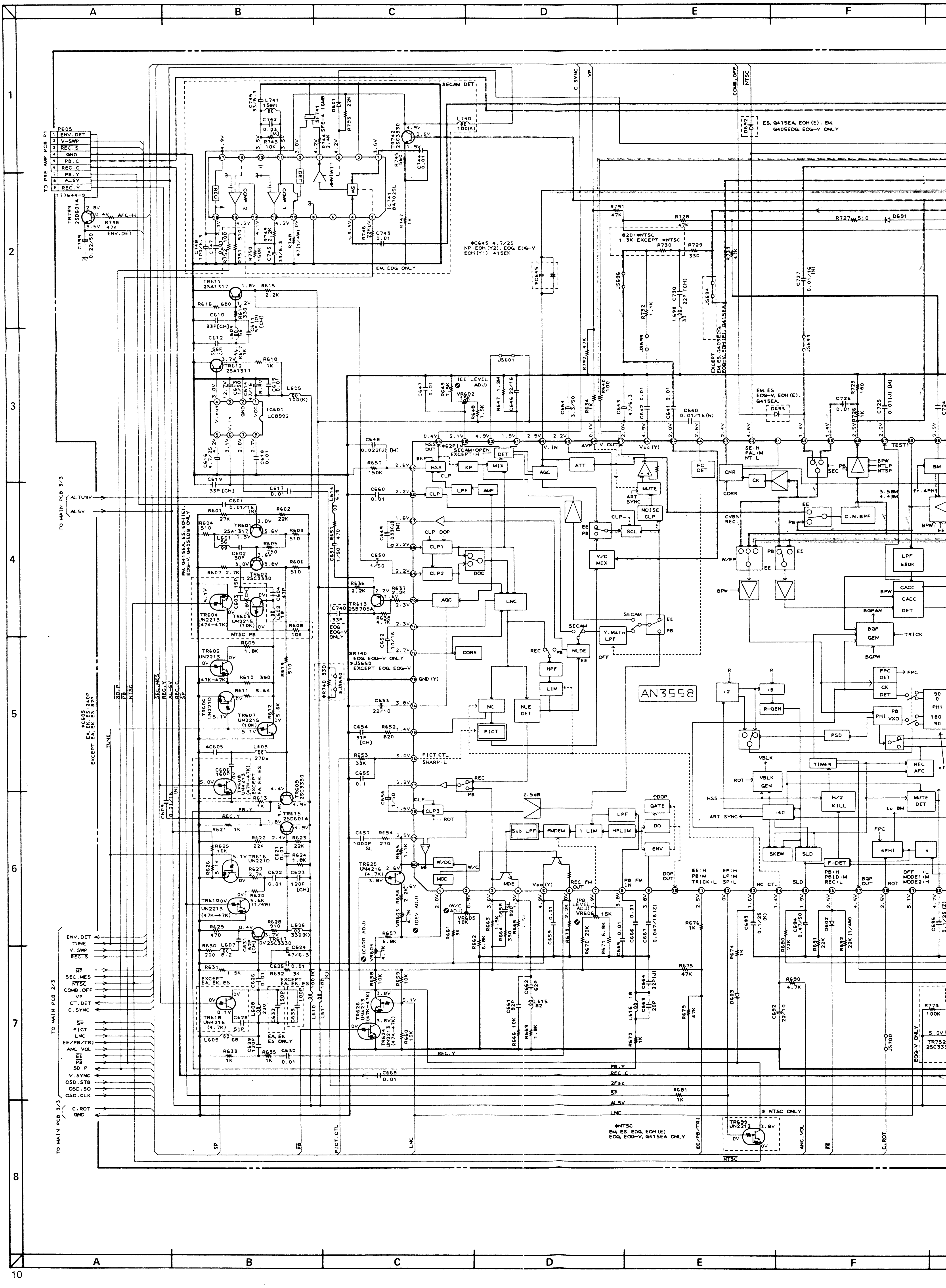
NO.6-5 V118855M A2

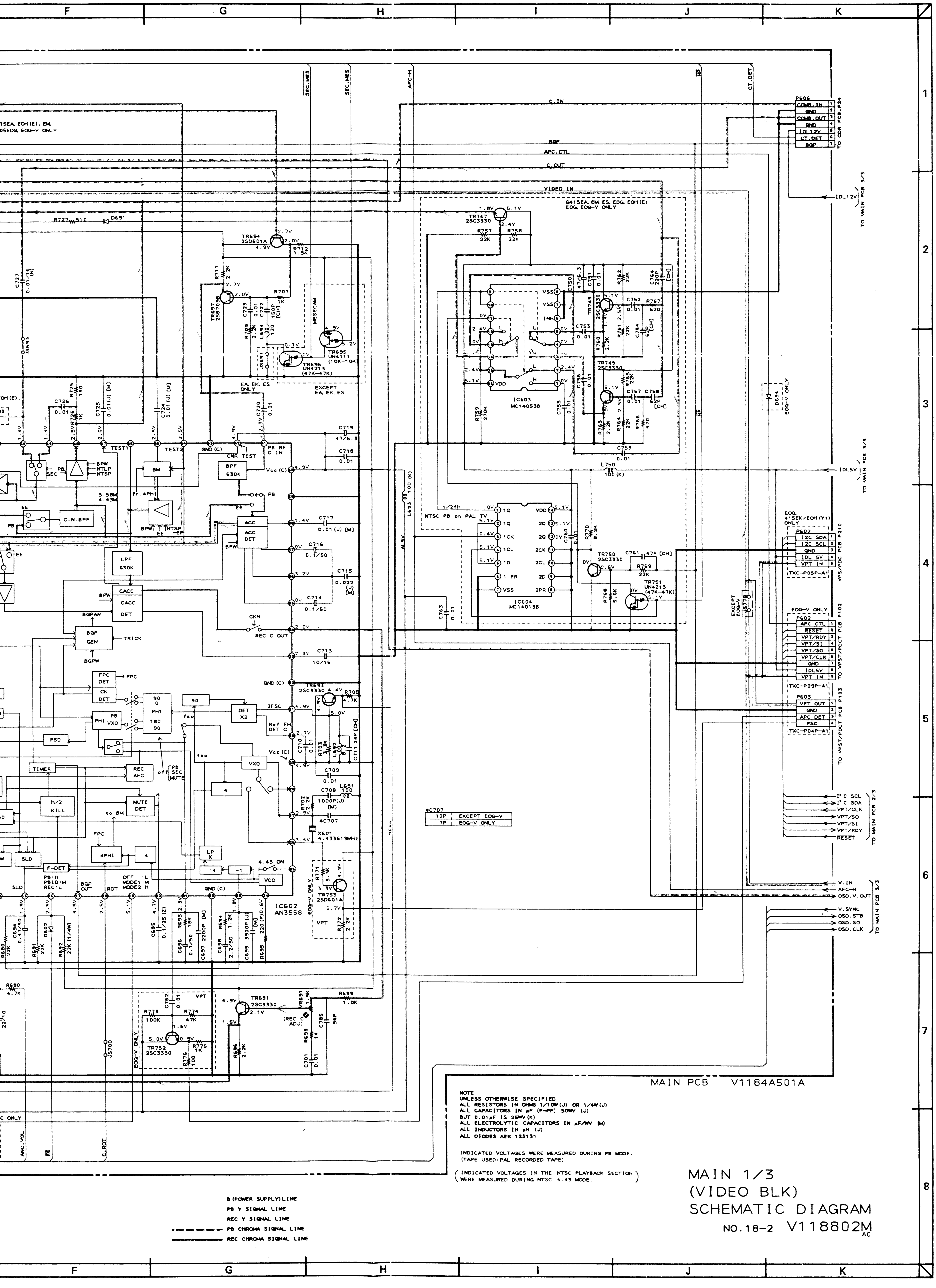


DECODER (A) PCB
V1182A505A
EOH (Y2), EOG-V, EOG ONLY
P2
R.E.A.IN
V.GND
R.E.V.IN
A.GND
EXT.V.IN
ALTU.9V
EXT.A.IN
GND
MIC.IN
DEC.A.OUT
TV/VCR
DEC.A.IN
A.GND
TV.A.OUT
D.CTL.12V
DEC.V.OUT
IDL12V
DEC.V.IN
V.GND
TV.V.OUT
WF2
WF1
DECODER (B) PCB
V1182A505B
EOH (Y2), EOG-V, EOG ONLY
P31
R.A.IN
TV/VCR
INT.A.IN
A.GND
INT.V.IN
GND
A.OUT
R.V.IN
ALTU9V
V.OUT
IDL12V
INT/EXT
MIC IN
P102
9P: 415EA, EM, EO, EOH, ES
EOG, EOG-V, 511EDG ONLY
8P: EK, 405EA/EDG ONLY
P801A
P801
FRONT PCB
V1188A5020
DRUM MOTOR
SDV-0302A
DM.FG
M.GND
DM.PG
DM.CONT
DM.POW
P4
AFC-H
SLOW.PB
HEAD.CTL
C.ROT
ALTU9V
PRE AMP
V1184A502
P1
P2
ENV.DET
V-SWP
REC.S
GND
PB.C
REC.C
PB.Y
AL5V
REC.Y
WF302
P605
P301
5P: EM, ES, EO, EOH, EOG-V
415EA, 511EDG
4P: EK, 405EA/EDG
TXT OUT
A.GND
OCD IN
WF601
EOG-V ONLY
P103
EXCEPT EOG, EOG-V
EOH (Y2)
9P: 415EA, EM, EO, EOH (E, Y1)
ES, 511EDG
8P: 405EA/EDG, EK
SAT PCB
V1188A5030
EK, EO, EOH (E, Y1) ONLY
NOR.V.OUT
IDL12V
V.OUT
GND
NOR.A.OUT
SAT.V.IN
SAT.A.IN
TV/VCR
A.OUT
OSD IN
A.GND
TXT OUT
P104
VPST/PDCT
PCB
V1184A5040
EOG-V ONLY
P603
Fsc
APC DET
A.GND
VPT OUT
VPT IN
IDL5V
D.GND
VPT/CLK
VPT/SO
VPT/SI
VPT/RDY
RESET
APC CTL
P602A
VPS/PDC
PCB
V1182A5040
EOG, EK, 415EOH (Y1) ONLY
P210
P602
I²C SCL
I²C SDA
CDR PCB
V1188A5010
P24
P606
BGP
CT.DET
IDL12V
COMB.OUT
COMB.IN
MAIN PCB
V1184A501A
P402
RSW 1
RSW 2
GND
RSW 4
RSW 3
LM+
LM-
MODE SELECTOR SW
LOADING MOTOR
LM/MS PCB
A
B
C
D
E
F
1
2
3
4
5
6
7
8


F
G
H
I
J
K
1
2
3
4
5
6
7
8
9
DRUM MOTOR
SDV-0302A
DM.FG
M.GND
M.GND
DM.PG
DM.CONT
DM.POW
P4
FULL TRACK ERASE HEAD
H.GND
FE.H
WF1
ROTARY VIDEO HEAD
SP.CH2
SP.COM
SP.CH1
LP.CH2
LP.COM
LP.CH1
P3
A/C REC
A/C PB
H.GND
SE.H
CTL-
CTL+
WF101
PRE AMP PCB
V1184A5020
P2
REC.S
GND
PB.C
REC.C
PB.Y
AL5V
REC.Y
FE.H
SE.H
H.GND
SP
A.OUT
A.GND
IDL9V
A.IN
A.EE
A.REC
A.MUTE
P301
AUDIO REC/PB
SIDE ERASE
CONTROL
P1
A/C HEAD PCB
V1102B5120
P I
AUDIO HEAD
S.ERASE HEAD
CTL HEAD
A/C HEAD PCB
V1102B5120(J1)
IF1
VIF UNIT
AFT.OUT
AGC.OUT
V.OUT
GND
IF.IN
Vcc
A.OUT
U.AGC
V.AGC
EO, EOG
EOG-V
ONLY
TU1
TV TUNER
RF IN
UHF
VT
VH
AGC
VL
AFT
B
IF
MD1
RF
CONVERTER
VTR TV OUT
ANT IN
RF OUT
V.IN
A.IN
MOD.B
NC
BST.B
WF202
FL+
FL-
-30V
REG6V
GND
M.GND
REG15V
+38V
POWER SUPPLY PCB
EOG, EOG-V: V1182A5030
EXCEPT EOG, EOG-V: V1182A5070
PCB
A501A
WF201
TR BASE
REG15V
IDL12V
TR (A) PCB
V1184A501C
P403
CM CONT
M.GND
FWD/REV
LIMIT
CM FG
GND
CM POWER
AL 5V
CAPSTAN MOTOR
SCV-0602A
P401
S0
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
-30V
T8
T7
T6
T5
T4
T3
T2
T1
T0
BU GND
IDL5V
REMOCON
GND
K2
K1
RESET
FI-
FL+
OPERATION PCB
V1184A5030
WF404
P404
BASE
REG15V
CM POW
TR (B) PCB
V1184A501D
LOADING MOTOR

CONNECTION DIAGRAM
NO.18-1 V118801M A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
P605
ENV.DET
V-SWP
REC.S
GND
PB.C
REC.C
PB.Y
AL5V
REC.Y
TO PRE AMP PCB P1
177644-9
TR799 2SD601A
R738 47K
AFC-H
ENV.DET
C799 0.22/50
SECAM DET
L741 15mH
C746 33/6.3
C742 0.03
R743 10K
SF741 SFE-4.16MB
R744 2.4K
D601
R793 22K
TR742 2SC3330
L740 100(K)
R745 560
C744 0.01
IC741 BA7025L
LIMAMP
REG
COMP 2
COMP 1
DET
SW
R746 220K
C743 0.01
R747 1K
C748 100/6.3
C747 0.01
R751 100
R750 150K
R749 2.2K
C745 33/6.3
R748 47(1/4W)
EM, EDG ONLY
TR611 2SA1317
R615 2.2K
R616 680
R614 330
C610 33P[CH]
C611 5P [CH]
C612 56P
R617 1K
TR612 2SA1317
R618 1K
L605 100(K)
IC601 LC8992
V.out
V.in
GND
VCC
C616 4.7/25
C618 0.01
C619 33P [CH]
C617 0.01
TO MAIN PCB 3/3
ALTU9V
AL5V
C601 0.01/16 (N)
R601 27K
R602 22K
TR601 2SA1317
R604 510
L601 56
R603 510
C602 30P
R605 150
R606 510
R607 2.7K
TR602 2SC3330
EM, G415EA, ES, EOH(E), EOG-V, G405EDG ONLY
TR604 UN2213 (47K-47K)
TR603 UN2215 (10K)
NTSC PB
R608 10K
TR605 UN2213
R609 1.8K
R610 390
R611 5.6K
R619 510
TR606 UN2210
TR607 UN2215 (10K)
R612 5.6K
#C605
L603 270μ
C606 160P
TR608 UN4213 (4.7K-47K)
EXCEPT EA, EK, ES
R613 1K
TR609 2SC3330
C609 0.01/16 (N)
PB.Y
REC.Y
R621 1K
TR615 2SD601A
R622 22K
R623 22K
R625 10K
R626 5.1K
TR616 UN221D
R627 2.7K
C621 0.01
R624 1.8K
C622 0.01
C623 120P [CH]
TR610 UN2213 (47K-47K)
R620 5.6K (1/4W)
R628 910
L606 330(K)
R629 470
TR617 2SC3330
C631 62P [CH]
R630 200
L607 8.2
C624 47/6.3
R631 1.5K
C625 0.01
R632 3K
EXCEPT EA, EK, ES
C626 51P
L608 220
C632 150P
C633 100P
L610 100(K)
L611 100(K)
TR618 UN4216 (4.7K)
C628
C629 120P
L609 68
EA, EK, ES ONLY
R633 1K
R635 1K
C630 0.01
#C605 EA, EK, ES: 240P EXCEPT EA, EK, ES: 82P
TUNE
SD.P
PB
NTSC
SEC.MES
REC.Y
AL-5V
REC.C
SP
ENV.DET
TUNE
V.SWP
REC.S
NP
SEC.MES
NTSC
COMB.OFF
VP
CT.DET
C.SYNC
TO MAIN PCB 2/3
SP
PICT
LNC
EE/PB/TRI
ANC.VOL
EE
PB
SD.P
V.SYNC
OSD.STB
OSD.SO
OSD.CLK
C.ROT
GND
TO MAIN PCB 3/3
L614 6.8
R651 470
C651 1/50
C648 0.022(J) [M]
R650 150K
C660 0.01
C649 0.033(J) [M]
C650 1/50
R636 2.2K
TR613 2SB709A
R637 2.2K
R638 4.7K
C740 33P
EOG EOG-V ONLY
#R740 EOG, EOG-V ONLY
#JS650 EXCEPT EOG, EOG-V
#R740 330
#JS650
C652 10/16
C653 22/10
C654 91P [CH]
R652 820
R653 33K
C655 0.1
C656 1/50
C657 1000P SL
R654 270
R655 1.1K
TR625 UN4216 (4.7K)
R656 2.2K
VR603 4.7K (DEV ADJ)
R657 6.8K
VR604 4.7K (CARR ADJ)
R658 10K
R659 10K
TR626 UN4213 (47K-47K)
TR624 UN2213 (47K-47K)
R660 10K
REC.Y
C668 0.01
PB.Y
REC.C
2Fsc
SP
R681 1K
AL5V
LNC
SP
PB
PICT.CTL
LNC
JS601
C647 0.01
R649 7.5K
VR602 15K
(EE LEVEL ADJ)
R648 7.5K
R647 1.2M
C646 22/16
#C645 4.7/25 NP: EOH(Y2), EOG, EOG-V EOH(Y1), 415EK
#C645
C.SYNC
VP
R792 47K
R640 100
C644 3.3/50
R634 1K
C643 47/6.3
C642 0.01
C641 0.01
C640 0.01/16 (N)
R791 47K
R728 47K
820: #NTSC 1.3K: EXCEPT #NTSC
R730
R729 330
R731 47K
JS696
R732 1.1K
L698 33
C730 22P [CH]
JS695
JS694
EXCEPT ES, G405EDG, EOG-V, EOH(E), G415EA
COMB.OFF
NTSC
D692
ES, G415EA, EOH(E), EM, G405EDG, EOG-V ONLY
R727 510
D691
C727 0.01/16 (N)
JS693
EM, ES EOG-V, EOH(E), G415EA
D693
C726 0.01
R725 1M
R726 1K
C725 0.01(J) [M]
C724
HSS OUT
#62PIN SECAM: OPEN EXCEPT: H
BKP
HSS
KP
MIX
DET
AGC
ATT
MUTE
ART SYNC
NOISE CLP
CLP
LPF
AMP
CLP1
CLP DOP
CLP2
DOC
AGC
LNC
CORR
SCL
Y/C MIX
SECAM
Y.Main LPF
NLDE
HPF
LIM
NC
N.E DET
PICT
PICT CTL SHARP: L
FC DET
CNR
CK
CORR
CVBS REC
SEC
BPW NTLP NTSP
BM
3.58M 4.43M
fr.4PHI
C.N.BPF
W/EP
BPW
LPF 630K
CACC
CACC DET
BGPAN
BGP GEN
TRICK
BGPW
FPC DET
FPC
CK DET
PB VXO
PH1
90 0 180 90
R
÷2
R
÷8
R-GEN
AN3558
PSD
VBLK
ROT
VBLK GEN
TIMER
REC AFC
HSS
H/2 KILL
MUTE DET
ART SYNC
÷40
to BM
FPC
SKEW
SLD
F-DET
4PHI
÷4
2.5dB
Sub LPF
FMDEM
1 LIM
HPLIM
LPF
GATE
DOP
DO
ENV
W/DC
W/C
MOD
MDE
Voo(Y)
REC FM OUT
PB FM IN
DOP OUT
EE: H PB: M TRICK: L
EP: H LP: M SP: L
NC CTL
SLD
PB: H PB(D): M REC: L
BGP OUT
ROT
OFF: L MODE1: M MODE2: H
V.IN
AVP
V.OUT
Vcc (Y)
SE: H PAL: M NT: L
TEST1
GND (Y)
VR605 10K
(W/C ADJ)
R661 3K
R662 6.8K
R664 1.5K
C658 82P
R663 330
R665 3.3K
C659 0.01
R673 2.2K
VR606 20K
(PB LEVEL ADJ)
R670 20K
R671 6.8K
C665 0.01
C666 0.01
C667 0.047/16 (Z)
R676 1K
R674 1K
D603
C693 0.1/25 (K)
C694 0.47/50
D602
R680 22K
R681 22K
R682 22K (1/4W)
C695 0.1/25 (Z)
C661 82P
C662 62P
L615 82
R666 10K
R669 1.8K
L616 18
C664 22P (J)
C665 20P
R672 1K
R675 47K
R679 47K
R690 4.7K
C692 22/10
JS700
EOG-V ONLY
R773 100K
TR752 2SC3330
C.ROT
PB
ANC.VOL
EE/PB/TRI
# NTSC ONLY
#NTSC EM, ES, EDG, EOH(E) EOG, EOG-V, G415EA ONLY
TR699 UN2213
NTSC


F
G
H
I
J
K
1
2
3
4
5
6
7
8
SEC.MES
AFC-H
NP
CT.DET
C.IN
BGP
APC.CTL
C.OUT
VIDEO IN
P606
COMB.IN
GND
COMB.OUT
GND
IDL12V
CT.DET
BGP
TO CDR PCB P724
IDL12V
TO MAIN PCB 3/3
G415EA, EM, ES, EDG, EOH(E)
EOG, EOG-V ONLY
TR747
2SC3330
R757 22K
R758 22K
TR694
2SD601A
R712 1.5K
R711 2.2K
TR697
2SB709
R707 1K
C723
C722 150P [CH]
R709
L694
MESECAM
TR695
UN4111
(10K-10K)
TR696
UN4213
(47K-47K)
EA, EK, ES ONLY
EXCEPT EA, EK, ES
JS691
JS693
C727 0.01
R727 510
D691
IC603
MC14053B
TR748
2SC3330
C752 0.01
R767 620
C753 0.01
C750
C751
R762
C764 220P [CH]
R760 2.2K
R761 22K
C754 6P [CH]
TR749
2SC3330
R765 22K
C756 0.01
C757 0.01
C758 62P [CH]
C755 0.01
R759 270K
R763 2.2K
R764 22K
R766 470
C759 0.01
L750 100 (K)
IDL5V
TO MAIN PCB 3/3
D694
EOG-V ONLY
C726 0.01
R725 180
R726 1K
C725 0.01(J) [M]
C724 0.01(J) [M]
C720 0.01
C719 47/6.3
C718 0.01
TEST1
TEST2
GND (C)
CNR TEST
PB RF C IN
Vcc (C)
BPF 630K
BM
BPW
NTLP
NTSP
SEC
PB
3.58M
4.43M
fr.4PH
EE
C.N.BPF
ACC
ACC DET
C717 0.01(J) [M]
C716 0.1/50
C715 0.022 (J) [M]
C714 0.1/50
C713 10/16
LPF 630K
CACC
CACC DET
BGPAN
BGP GEN
TRICK
BGPW
CKN
REC C OUT
L693 100 (K)
AL5V
1/2fH
NTSC PB on PAL TV
IC604
MC14013B
VDD
VSS
1Q
1CK
1CL
1D
1 PR
2Q
2CK
2CL
2D
2PR
C760 0.01
R770 8.2K
TR750
2SC3330
C761 47P [CH]
R769 22K
TR751
UN4213
(47K-47K)
R768 5.6K
C763 0.01
EOG
415EK/EOH(Y1) ONLY
P602
I2C SDA
I2C SCL
GND
IDL 5V
VPT IN
TXC-P05P-A1
TO VPS/PDC PCB P210
EXCEPT EOG-V
JS778
EOG-V ONLY
P602
APC CTL
RESET
VPT/RDY
VPT/SI
VPT/SO
VPT/CLK
GND
IDL5V
VPT IN
TXC-P09P-A1
TO VPST/PDCT PCB P102
P603
VPT OUT
GND
APC DET
FSC
TXC-P04P-A1
TO VPST/PDCT PCB P103
I²C SCL
I²C SDA
VPT/CLK
VPT/SO
VPT/SI
VPT/RDY
RESET
TO MAIN PCB 2/3
V.IN
AFC-H
OSD.V.OUT
V.SYNC
OSD.STB
OSD.SO
OSD.CLK
TO MAIN PCB 3/3
FPC DET
FPC
CK DET
PB PHI VXO
PH1
90
0
180
PSD
TIMER
REC AFC
PB SEC MUTE
DET X2
2FSC
Ref FH DET C
VXO
:4
H/2 KILL
MUTE DET
to BM
FPC
4PHI
LP X
-1
VCO
4.43 ON
SLD
F-DET
PB:H
PBID:M
REC:L
OFF :L
MODE1:M
MODE2:H
BGP OUT
ROT
TR693
2SC3330
R705 4.7K
C710 0.01
R703
C711 24P [CH]
C709 0.01
C708 100
L691
R702 2.2K
1000P(J) [M]
*C707
X601
4.433619MHz
*C707
10P EXCEPT EOG-V
7P EOG-V ONLY
R771 3.3K
TR753
2SD601A
R772 2.2K
VPT
EOG-V ONLY
IC602
AN3558
C694 0.47/50
D602
R691 22K
R692 22K (1/4W)
R680 22K
C695 0.1/25 (Z)
R693 18K
C696 0.1/50
C697 2200P [M]
C698 2.2/50
R694 1.2K
C699 3900P (J) [M]
R695 220 (F)
R690 4.7K
VPT
C762 0.01
R773 100K
R774 47K
TR752
2SC3330
R775 1K
R776 100
EOG-V ONLY
JS700
TR691
2SC3330
VR691 1.5K
R699 1.0K
(REC C ADJ)
C785 56P
R698 1K
R696 2.2K
C701 0.01
C ONLY
ANC. VOL
C.ROT
MAIN PCB V1184A501A

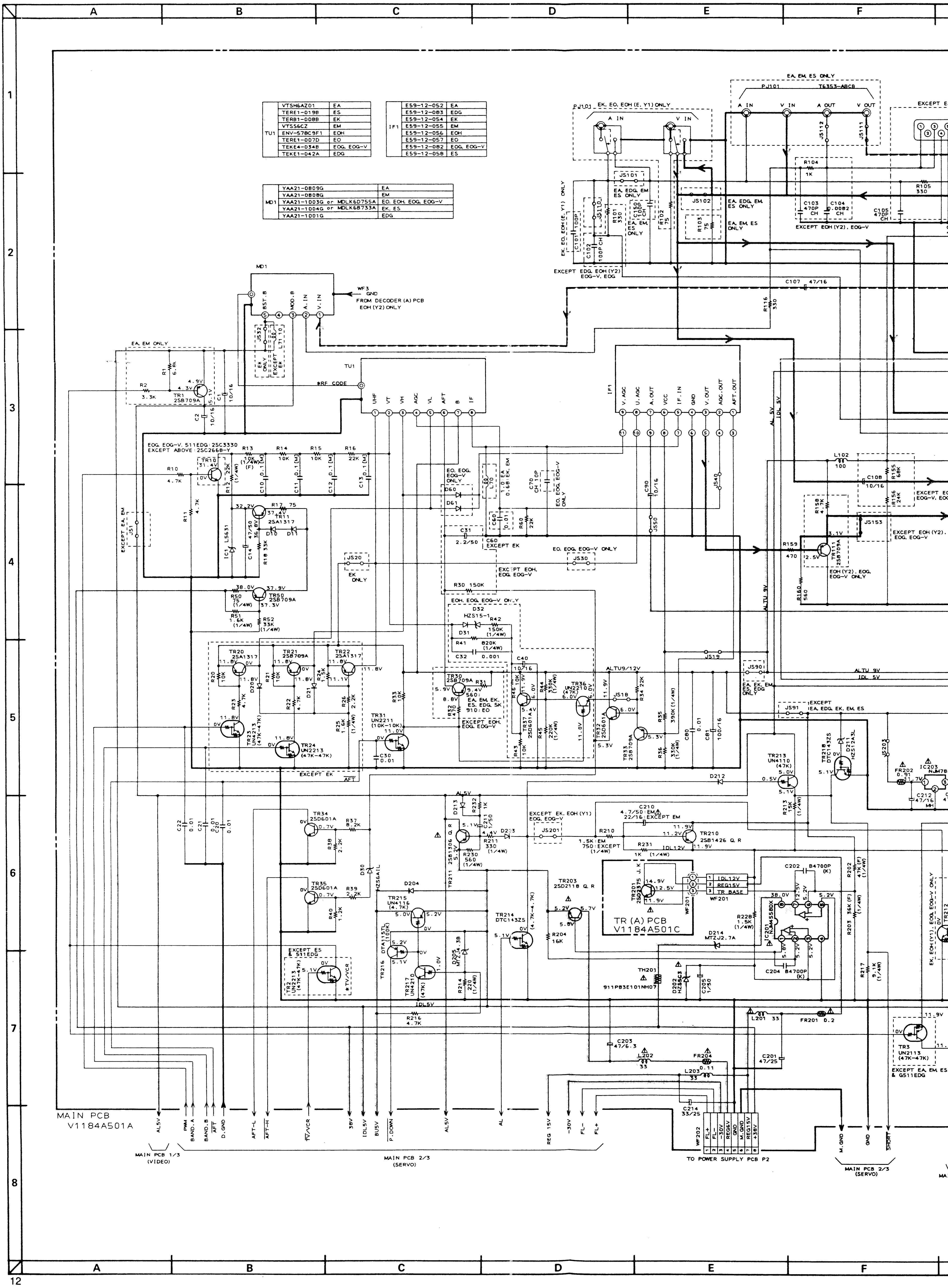
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W(J) OR 1/4W(J)
ALL CAPACITORS IN μF (P=PF) 50WV (J)
BUT 0.01μF IS 25WV(K)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (J)
ALL DIODES AER 1SS131

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE USED:PAL RECORDED TAPE)

(INDICATED VOLTAGES IN THE NTSC PLAYBACK SECTION
WERE MEASURED DURING NTSC 4.43 MODE.)

B (POWER SUPPLY) LINE
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE

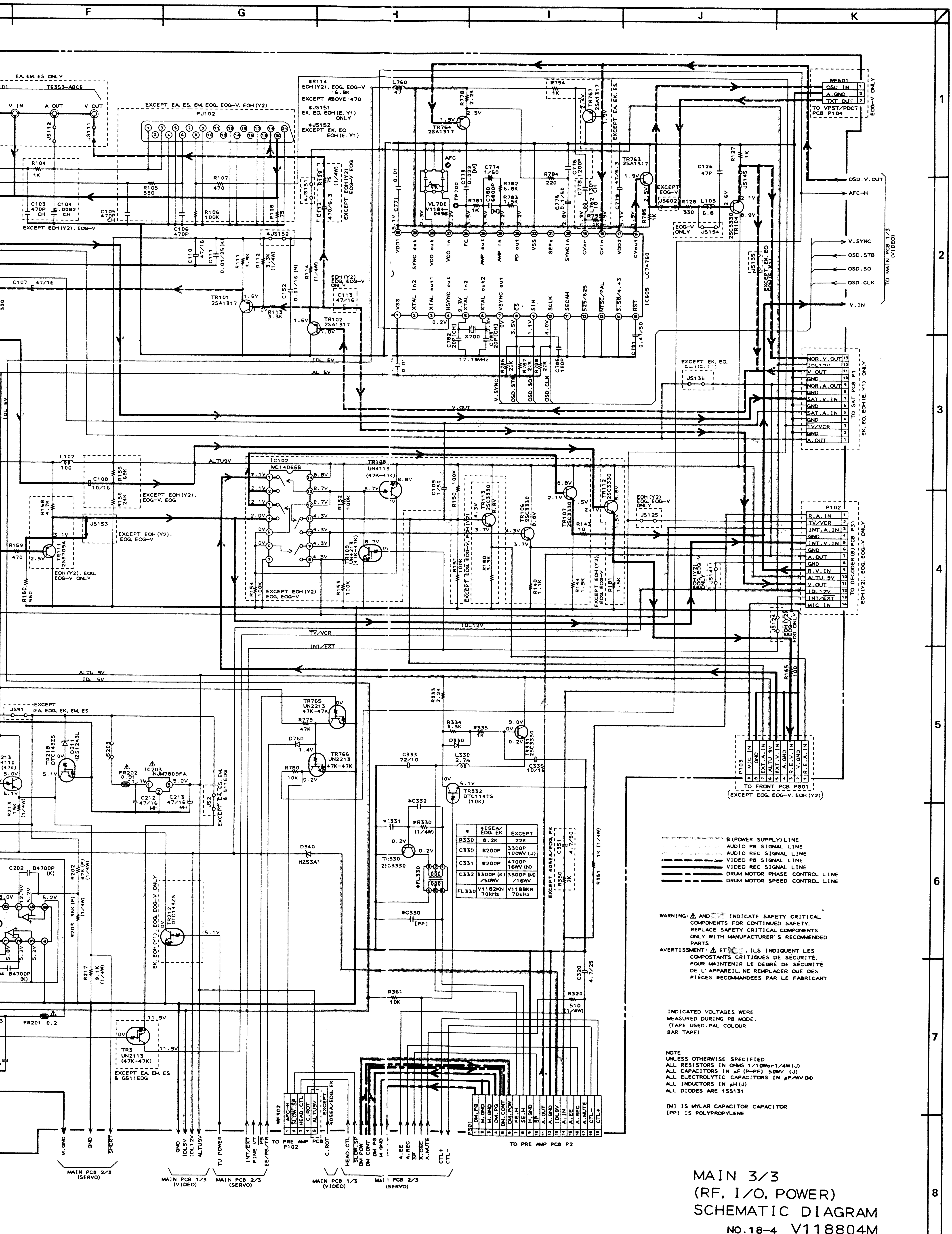
MAIN 1/3
(VIDEO BLK)
SCHEMATIC DIAGRAM
NO.18-2 V118802M
A0


A
B
C
D
E
F
1
2
3
4
5
6
7
8
MAIN PCB
V1184A501A
MAIN PCB 1/3
(VIDEO)
MAIN PCB 2/3
(SERVO)
TO POWER SUPPLY PCB P2
TR (A) PCB
V1184A501C
MD1
TU1
IF1
PJ101
EA, EM, ES ONLY
EK, EO, EOH (E, Y1) ONLY
A IN
V IN
A OUT
V OUT
T6353-ABCB
FROM DECODER (A) PCB
EOH (Y2) ONLY
WF3
GND
*RF CODE
UHF
VT
VH
AGC
VL
AFT
B
IF
V.AGC
U.AGC
A.OUT
VCC
IF.IN
GND
V.OUT
AGC.OUT
AFT.OUT
BST.B
MOD.B
A.IN
V.IN
EOG, EOG-V, 511EDG: 2SC3330
EXCEPT ABOVE: 2SC2668-Y
AL5V
PWM
BAND.A
BAND.B
AFT
D.GND
AFT-L
AFT-H
TV/VCR
38V
IDL5V
BU5V
P.DOWN
AL5V
AL
REG 15V
-30V
FL-
FL+
M.GND
GND
SHORT
WF202
FL+
FL-
-30V
REG6V
GND
M.GND
REG15V
+38V
WF201
IDL12V
REG15V
TR BASE

TU1	VTSH6AZ01	EA
	TERE1-019B	ES
	TERB1-008B	EK
	VTSS6CZ	EM
	ENV-578C9F1	EOH
	TERE1-007D	EO
	TEKE4-034B	EOG, EOG-V
	TEKE1-042A	EDG

IF1	E59-12-052	EA
	E59-12-083	EDG
	E59-12-054	EK
	E59-12-055	EM
	E59-12-056	EOH
	E59-12-057	EO
	E59-12-082	EOG, EOG-V
	E59-12-058	ES

MD1	YAA21-0809G	EA
	YAA21-0808G	EM
	YAA21-1003G or MDLK6D755A	EO, EOH, EOG, EOG-V
	YAA21-1004G or MDLK6B733A	EK, ES
	YAA21-1001G	EDG


F
G
H
I
J
K
1
2
3
4
5
6
7
8
EA, EM, ES ONLY
T6353-ABCB
V IN
A OUT
V OUT
PJ102
EXCEPT EA, ES, EM, EOG, EOG-V, EOH (Y2)
EXCEPT EOH (Y2), EOG-V
IC605 LC74760
IC102 MC14066B
IC203 NJM7809FA
TR101 2SA1317
TR102 2SA1317
TR106 2SC3330
TR107 2SC3330
TR108 UN4113
TR109 UN4213
TR111 2SB709A
TR763 2SA1317
TR764 2SA1317
TR765 UN2213
TR766 UN2213
TR767 2SA1317
TR104 2SC3330
TR3 UN2113
TR212 DTC143ZS
TR218 DTC143ZS
TR330 2SC3330
TR331 2SC3330
TR332 DTC114TS (10K)
X700 17.73MHz
VL700 V1184-0498
WF601
OSD IN
A.GND
TXT OUT
TO VPST/PDCT PCB P104
EOG-V ONLY
OSD.V.OUT
AFC-H
V.SYNC
OSD.STB
OSD.SO
OSD.CLK
V.IN
TO MAIN PCB 1/3 (VIDEO)
TO SAT PCB P1 EK, EO, EOH (E, Y1) ONLY
P102
TO DECODER (B) PCB P31 EOH (Y2), EOG, EOG-V ONLY
P103
TO FRONT PCB P801 (EXCEPT EOG, EOG-V, EOH (Y2))
WF302
TO PRE AMP PCB P102
P301
TO PRE AMP PCB P2
MAIN PCB 2/3 (SERVO)
MAIN PCB 1/3 (VIDEO)
ALTU 9V
IDL 5V
IDL12V
TV/VCR
INT/EXT
V.OUT
AL 5V

*	405EA/ EDG. EK	EXCEPT
R330	8.2K	22K
C330	8200P	3300P 100WV (J)
C331	8200P	4700P 16WV (N)
C332	3300P (K) /50WV	3300P (M) /16WV
FL330	V1182KN 70kHz	V1188KN 70kHz

B (POWER SUPPLY) LINE
AUDIO PB SIGNAL LINE
AUDIO REC SIGNAL LINE
VIDEO PB SIGNAL LINE
VIDEO REC SIGNAL LINE
DRUM MOTOR PHASE CONTROL LINE
DRUM MOTOR SPEED CONTROL LINE

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨. ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

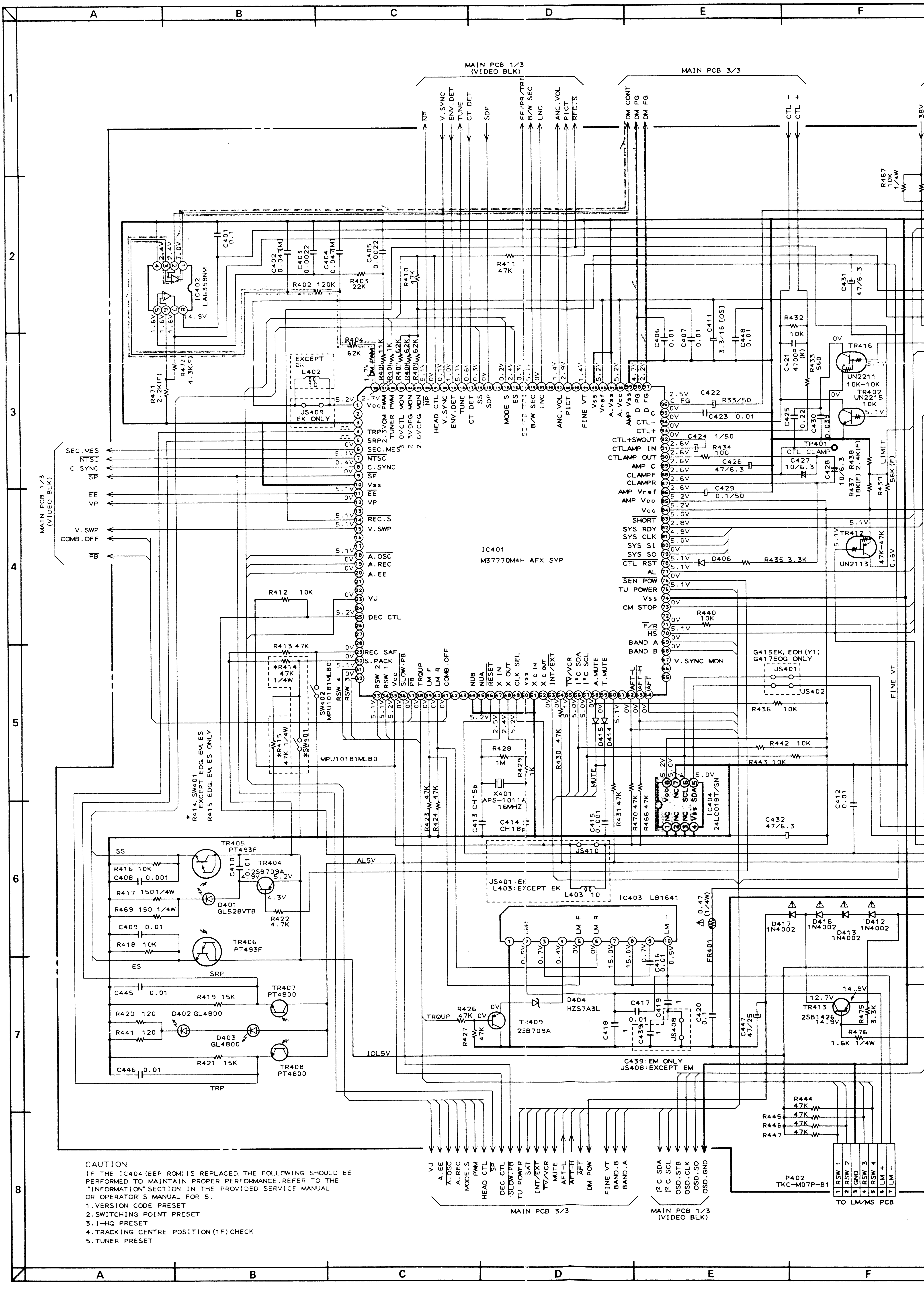
INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE USED: PAL COLOUR BAR TAPE)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W or 1/4W (J)
ALL CAPACITORS IN µF (P=PF) 50WV (J)
ALL ELECTROLYTIC CAPACITORS IN µF/WV (M)
ALL INDUCTORS IN µH (J)
ALL DIODES ARE 1SS131

[M] IS MYLAR CAPACITOR CAPACITOR
[PP] IS POLYPROPYLENE

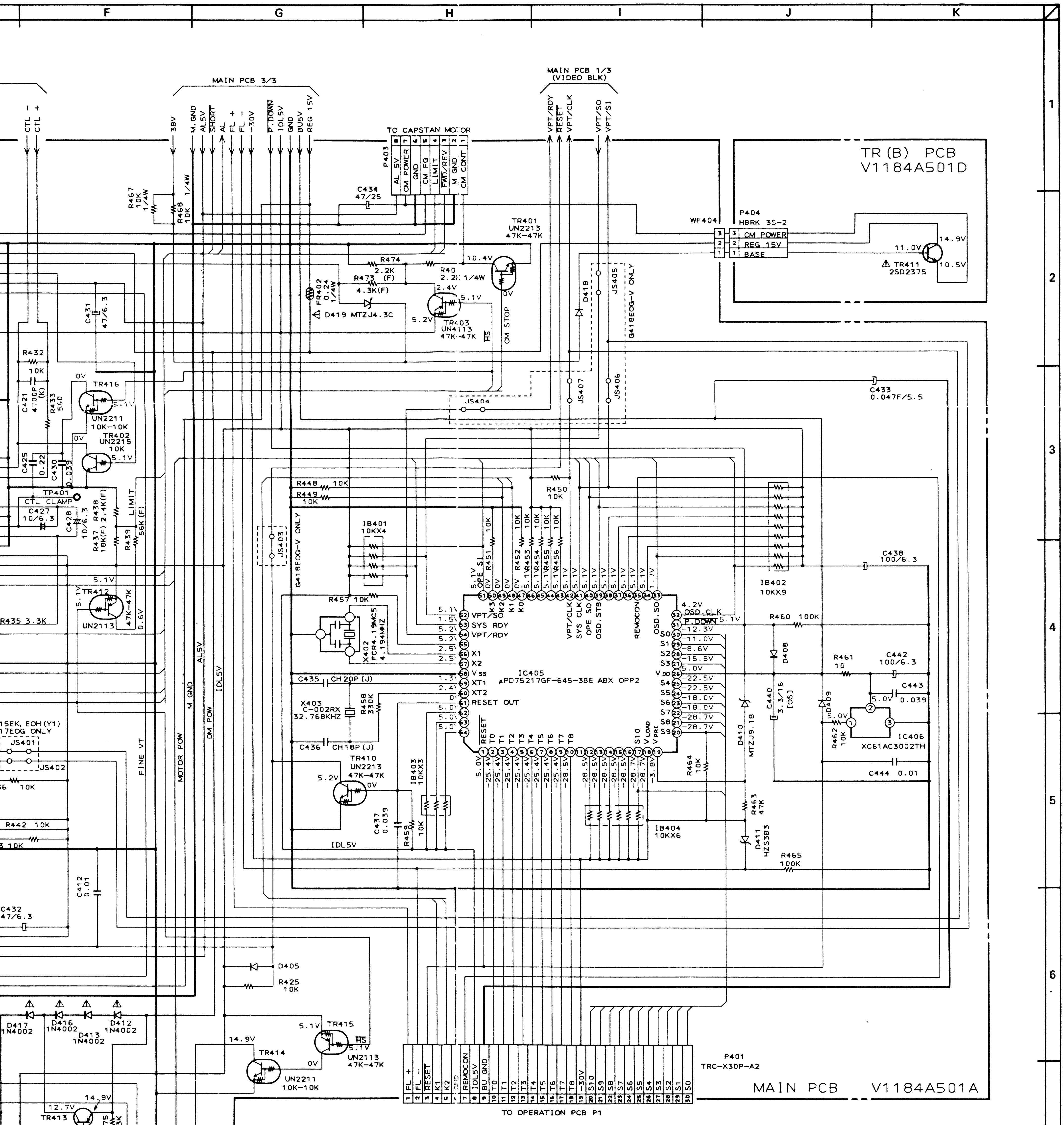
MAIN 3/3
(RF, I/O, POWER)
SCHEMATIC DIAGRAM

NO.18-4 V118804M A0


MAIN PCB 1/3 (VIDEO BLK)
MAIN PCB 3/3
NP
V.SYNC
ENV.DET
TUNE
CT DET
SDP
FF/PB/TRI
B/W SEC
LNC
ANC.VOL
PICT
REC.S
DM CONT
DM PG
DM FG
CTL −
CTL +
38V
R467 10K 1/4W
C401 0.1
IC402 LA6358NM
C402 0.047(M)
C403 0.0022
C404 0.047(M)
C405 0.0022
R402 120K
R403 22K
R410 47K
R411 47K
R404 62K
EXCEPT EK
L402 10
JS409 EK ONLY
R471 2.2K(F)
R472 4.3K(F)
C406 0.01
C407 0.01
C411 3.3/16 [OS]
C448 0.01
R432 10K
C421 4700P (K)
R433 560
TR416 UN2211 10K-10K
TR402 UN2215 10K
C422
R33/50
C423 0.01
C424 1/50
R434 100
C426 47/6.3
C429 0.1/50
C425 0.22
C430 0.039
TP401 CTL CLAMP
C427 10/6.3
C428 10/6.3
R437 18K(F)
R438 2.4K(F)
R439 56K(F)
LIMIT
TR412 UN2113
47K-47K
D406
R435 3.3K
R440 10K
IC401 M37770M4H AFX SYP
SEC.MES
NTSC
C.SYNC
SP
EE
VP
V.SWP
COMB.OFF
PB
Vcc
TRP
SRP
Vss
REC.S
A.OSC
A.REC
A.EE
VJ
DEC CTL
REC SAF
S.PACK
RSW 2
RSW 1
RSW 3
RSW 4
R412 10K
R413 47K
*R414 47K 1/4W
*R415 47K 1/4W
SW402 MPU10181MLB0
*SW401
MPU10181MLB0
* R414, SW401: EXCEPT EDG, EM, ES
R415: EDG, EM, ES ONLY
CTL+SWOUT
CTLAMP IN
CTLAMP OUT
AMP C
CLAMPF
CLAMPR
AMP Vref
AMP Vcc
SHORT
SYS RDY
SYS CLK
SYS SI
SYS SO
CTL RST
AL
SEN POW
TU POWER
CM STOP
F/R
HS
BAND A
BAND B
V.SYNC MON
G415EK, EOH(Y1) G417EOG ONLY
JS401
JS402
R436 10K
R442 10K
R443 10K
NUB
NUA
RESET
X IN
X OUT
CLK SEL
X c IN
X c OUT
INT/EXT
TV/VCR
I²C SDA
I²C SCL
A.MUTE
T.MUTE
AFT-L
AFT-H
AFT
R428 1M
R429 1K
X401 APS-1011A 16MHZ
C413 CH15p
C414 CH18p
R423 47K
R424 47K
R430 47K
D415
D414
MUTE
C415 0.001
R431 47K
R470 47K
R466 47K
IC404 24LC01BT/SN
C412 0.01
C432 47/6.3
JS410
JS401: EK
L403: EXCEPT EK
L403 10
IC403 LB1641
0.47 (1/4W)
FR401
D417 1N4002
D416 1N4002
D413 1N4002
D412 1N4002
TR405 PT493F
SS
R416 10K
C408 0.001
C410 0.01
TR404 2SB709A
R417 150 1/4W
D401 GL528VTB
R469 150 1/4W
R422 4.7K
C409 0.01
R418 10K
TR406 PT493F
ES
SRP
C445 0.01
R419 15K
TR407 PT4800
R420 120
D402 GL4800
R441 120
D403 GL4800
R421 15K
TR408 PT4800
C446 0.01
TRP
AL5V
IDL5V
TRQUP
R426 47K
R427 47K
TR409 2SB709A
D404 HZS7A3L
C417 0.01
C418
C419 1
C439 1
JS408
C420 0.1
C416 1
C447 47/25
C439: EM ONLY
JS408: EXCEPT EM
TR413 2SB1426
R475 3.3K
R476 1.6K 1/4W
R444 47K
R445 47K
R446 47K
R447 47K
P402 TKC-M07P-B1
RSW 1
RSW 2
GND
RSW 3
RSW 4
LM +
LM −
TO LM/MS PCB
A.EE
A.OSC
A.REC
MODE.S
PWM
HEAD CTL
SP
DEC CTL
SLOW.PB
TU POWER
SAT
INT/EXT
TV/VCR
MUTE
AFT-L
AFT-H
AFT
DM POW
FINE VT
BAND.B
BAND.A
I²C SDA
I²C SCL
OSD.STB
OSD.CLK
OSD.SO
OSD.GND
MAIN PCB 3/3
MAIN PCB 1/3 (VIDEO BLK)

CAUTION
IF THE IC404 (EEP ROM) IS REPLACED, THE FOLLOWING SHOULD BE PERFORMED TO MAINTAIN PROPER PERFORMANCE. REFER TO THE "INFORMATION" SECTION IN THE PROVIDED SERVICE MANUAL, OR OPERATOR'S MANUAL FOR 5.

1. VERSION CODE PRESET
2. SWITCHING POINT PRESET
3. I-HQ PRESET
4. TRACKING CENTRE POSITION (1F) CHECK
5. TUNER PRESET


F
G
H
I
J
K
1
2
3
4
5
6
7
MAIN PCB 3/3
MAIN PCB 1/3 (VIDEO BLK)
CTL −
CTL +
38V
M.GND
AL5V
SHORT
AL
FL +
FL −
−30V
P.DOWN
IDL5V
GND
BU5V
REG 15V
VPT/RDY
RESET
VPT/CLK
VPT/SO
VPT/SI
TO CAPSTAN MOTOR
P403
AL 5V
CM POWER
GND
CM FG
LIMIT
FWD/REV
M GND
CM CONT
TR (B) PCB
V1184A501D
WF404
P404
HBRK 3S-2
CM POWER
REG 15V
BASE
14.9V
11.0V
10.5V
TR411
2SD2375
R467 10K 1/4W
R468 10K 1/4W
C434 47/25
TR401 UN2213 47K-47K
10.4V
R474 2.2K
R473 (F) 4.3K(F)
R40 2.2 1/4W
FR402 0.24 1/4W
D419 MTZJ4.3C
2.4V
5.1V
5.2V
0V
TR403 UN4113 47K-47K
CM STOP
D418
JS405
G418EOG-V ONLY
JS407
JS406
JS404
C433 0.047F/5.5
C431 47/6.3
R432 10K
C421 4700P (K)
R433 560
TR416
UN2211 10K-10K
TR402 UN2215 10K
C425 0.22
C430 0.039
TP401
CTL CLAMP
C427 10/6.3
C428 10/6.3
R438 2.4K(F)
R437 18K(F)
R439 56K (F)
LIMIT
R448 10K
R449 10K
R450 10K
IB401 10KX4
R451 10K
R452 10K
R453 10K
R454 10K
R455 10K
R456 10K
JS403
G418EOG-V ONLY
IB402 10KX9
C438 100/6.3
R457 10K
X402 FCR4.19MC5 4.194MHZ
VPT/SO
SYS RDY
VPT/RDY
X1
X2
Vss
XT1
XT2
RESET OUT
IC405
µPD75217GF-645-3BE ABX OPP2
VPT/CLK
SYS CLK
OPE SO
OSD. STB
REMOCON
OSD. SO
OSD. CLK
P.DOWN
S0
S1
S2
S3
VDD
S4
S5
S6
S7
S8
S9
S10
VLOAD
VPRI
R460 100K
D408
R461 10
C442 100/6.3
C443 0.039
D409
IC406
XC61AC3002TH
R462 10K
C440 3.3/16 [OS]
D410 MTZJ9.1B
C444 0.01
C435 CH20P (J)
X403 C-002RX 32.768KHZ
R458 330K
C436 CH18P (J)
TR410 UN2213 47K-47K
IB403 10KX3
C437 0.039
R459 10K
IDL5V
R464 10K
IB404 10KX6
R463 47K
D411 HZS3B3
R465 100K
TR412
UN2113
47K-47K
R435 3.3K
AL5V
M GND
IDL5V
DM POW
MOTOR POW
FINE VT
15EK, EOH (Y1)
17EOG ONLY
JS401
JS402
10K
R442 10K
C412 0.01
C432 47/6.3
D405
R425 10K
D417 1N4002
D416 1N4002
D413 1N4002
D412 1N4002
TR415
UN2113 47K-47K
14.9V
TR414
UN2211 10K-10K
12.7V
TR413
2SB1426
R475 3.3K
R476 1.6K 1/4W
P401
TRC-X30P-A2
FL +
FL −
RESET
K1
K2
GND
REMOCON
IDL5V
BU GND
T0
T1
T2
T3
T4
T5
T6
T7
T8
−30V
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
S0
MAIN PCB V1184A501A
TO OPERATION PCB P1

B (POWER SUPPLY) LINE

CAPSTAN MOTOR PHASE CONTROL LINE

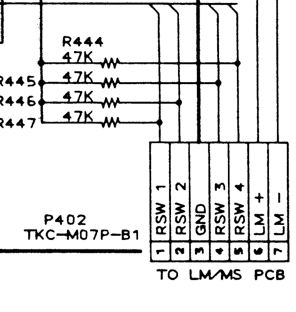
CAPSTAN MOTOR SPEED CONTROL LINE

DRUM MOTOR PHASE CONTRO. LINE

DRUM MOTOR SPEED CONTRO. LINE

WARNING: ⚠ AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

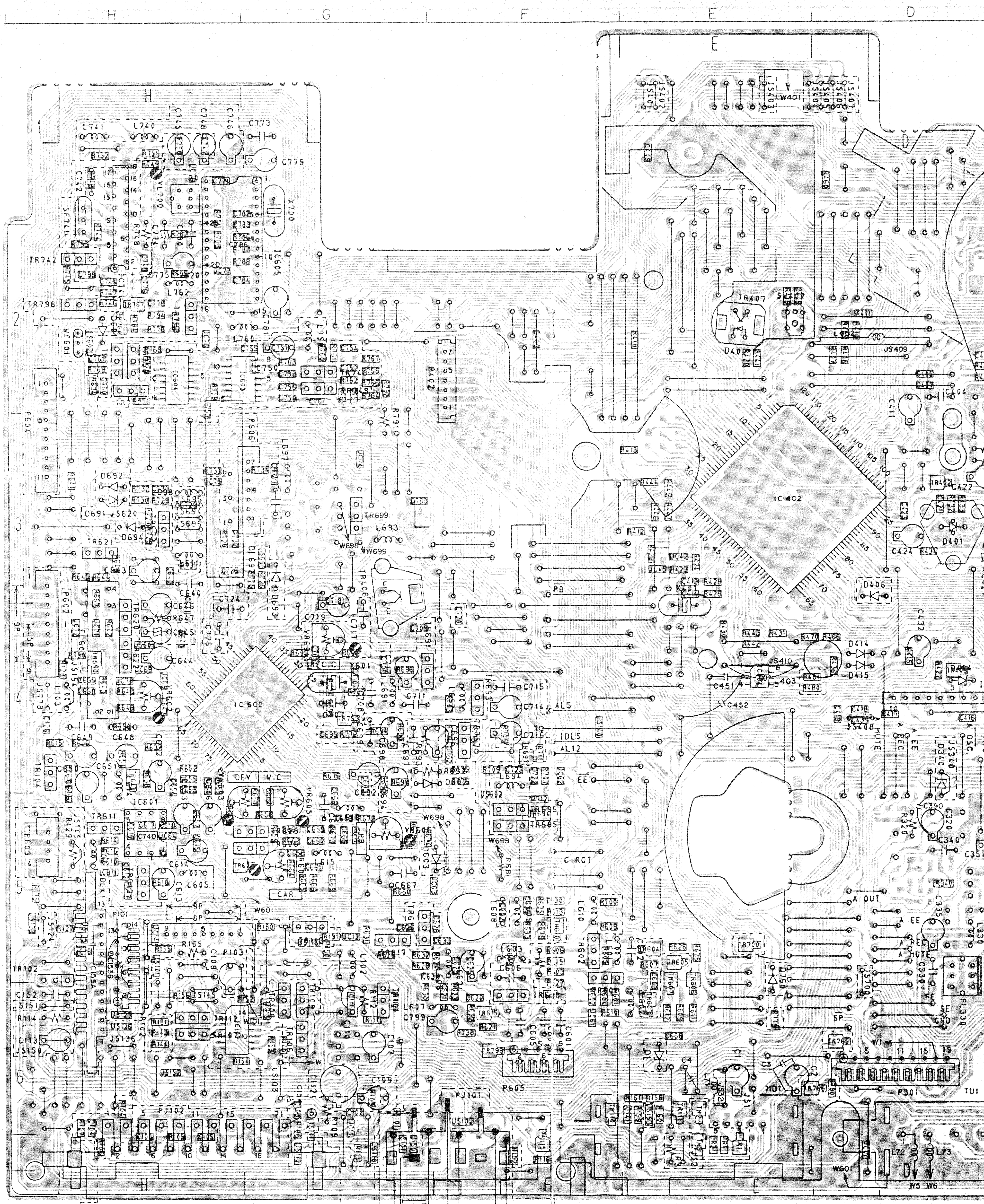

R444 47K
R445 47K
R446 47K
R447 47K
P402
TKC-M07P-B1
RSW 1
RSW 2
GND
RSW 3
RSW 4
LM +
LM −
TO LM/MS PCB

NOTE;
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS (1/10W)
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL DIODES IS 1SS131
[M] IS MYLAR CAPACITOR
[OS] IS ELECTROLYTIC
CAPACITOR WITH ORGANIC SEMICONDUCTOR

INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE USED: PAL RECORDED TAPE)

MAIN 2/3
(SERVO/SYSCON)
SCHEMATIC DIAGRAM

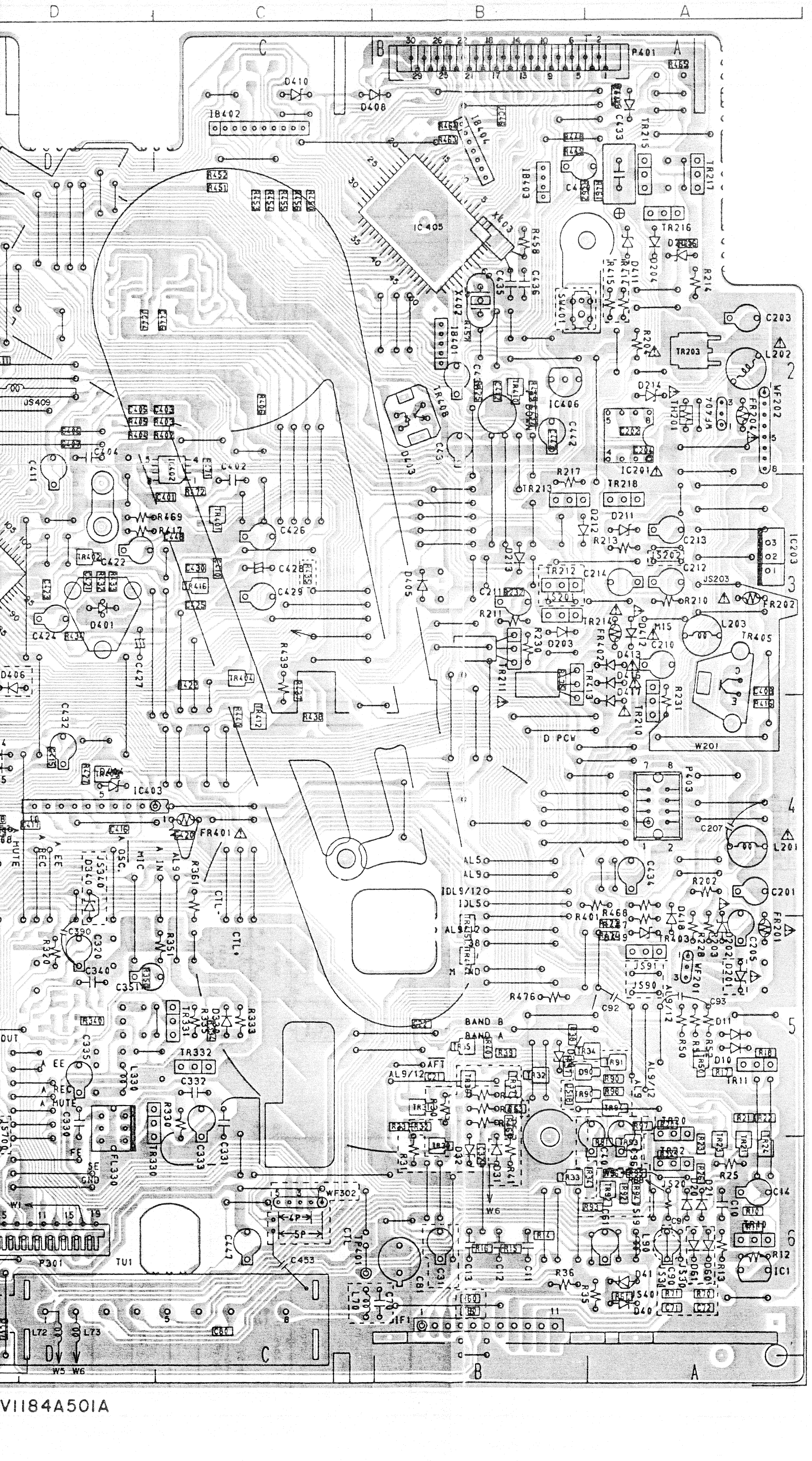
NO.18-3 V118803M A1


H
G
F
E
D
IC402
IC602
IC601
IC605
IC603
IC604
X700
X601
TR407
TR742
TR798
TR621
TR620
TR611
TR102
P604
P602
P603
P606
P101
P103
P605
P301
PJ101
PJ102
TU1
A.OUT
V.OUT
A.IN
V.IN
21PIN
TV CONT.
DEV
W.C
CAR
PB
AL5
IDL5
AL12
EE
C ROT
A OUT
MUTE
SP
W601

MAIN PCB V1184A501A

WARNING: ⚠INDICATES SAFETY CRITICA
REPLACE SAFETY CRITICAL CO
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COM
POUR MAINTENIR LE DEGRÉ D
NE REMPLACER QUE DES PIÈC


D
C
B
A
P401
IC405
IC406
IC201
IC203
IC403
IC402
IB401
IB402
IB403
IB404
TR203
TR405
TR210
TR211
TR212
TR213
TR215
TR216
TR217
TR218
TR332
P403
W201
WF201
WF202
WF302
TU1
P301
C203
C201
C207
L201
L202
L203
FR202
FR401
BAND B
BAND A
AFT
D PCW
IF1
W5
W6
1
2
3
4
5
6

VI184A501A

! INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
EPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
ECOMMENDED PARTS

IENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
OUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
E REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

PRINCIPAL PARTS LOCATION

ICs

IC1	A6
IC102	H6
IC201	A2
IC203	A3
IC401	E3
IC402	C2
IC403	D4
IC404	E4
IC405	B1
IC406	B2
IC601	H5
IC602	G,H4
IC603	G,H2
IC604	H2
IC741	H1,2
IC605	G,H2

WFs

WF201	A5
WF202	A2
WF302	C6
WF404	A2
WF601	H2

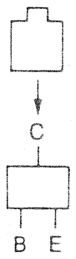
CONNECTORs

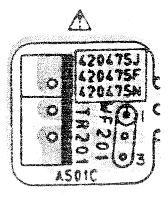
P103	H5
P301	D6
P401	B1
P402	F2
P403	A4
P602	H3,4
P603	H5
P605	F6
P606	G3

TRANSISTORs

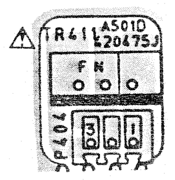
TR1	E6
TR2	E6
TR3	E6
TR10	A6
TR11	A5
TR20	A5,6
TR21	A5,6
TR22	A6
TR23	A5,6
TR24	A5,6
TR30	B6
TR31	B5
TR32	B5
TR33	B6
TR34	A,B5
TR35	B5
TR36	B5
TR37	B5
TR50	A5
TR101	G6
TR102	H5
TR104	H4
TR106	G6
TR107	H6
TR108	G6
TR109	G6
TR111	E6
TR112	H6
TR113	G5
TR203	A2
TR210	A3,4
TR211	B3
TR212	B3
TR213	B3
TR214	B3
TR215	A1
TR216	A1
TR217	A1
TR218	A3
TR330	C,D5
TR331	C5
TR332	C5
TR401	C3
TR402	D3
TR403	A5
TR404	C3
TR405	A3,4
TR406	G3,4
TR407	E2
TR408	B2
TR409	D4
TR410	B2
TR412	C4
TR413	B3
TR414	B5
TR415	B5
TR416	C3
TR601	F5
TR602	F5
TR603	E6
TR604	E5
TR605	E5
TR606	E5,6
TR607	E5,6
TR608	F6
TR609	F5
TR610	F5
TR611	H5
TR612	H5
TR613	H4
TR615	F6
TR616	F6
TR617	G5
TR618	G5
TR624	G,H5
TR625	G,H5
TR626	G,H5
TR691	G4
TR693	F4
TR694	F5
TR695	F5
TR696	F5
TR697	F4
TR699	G3
TR742	H2
TR747	H2
TR748	G2
TR749	G2
TR750	H2
TR751	H2
TR752	F4
TR753	G4
TR763	H2
TR764	H2
TR765	D6
TR766	D,E6
TR767	H2
TR799	F6

SINGLE CHIP TRANSISTOR

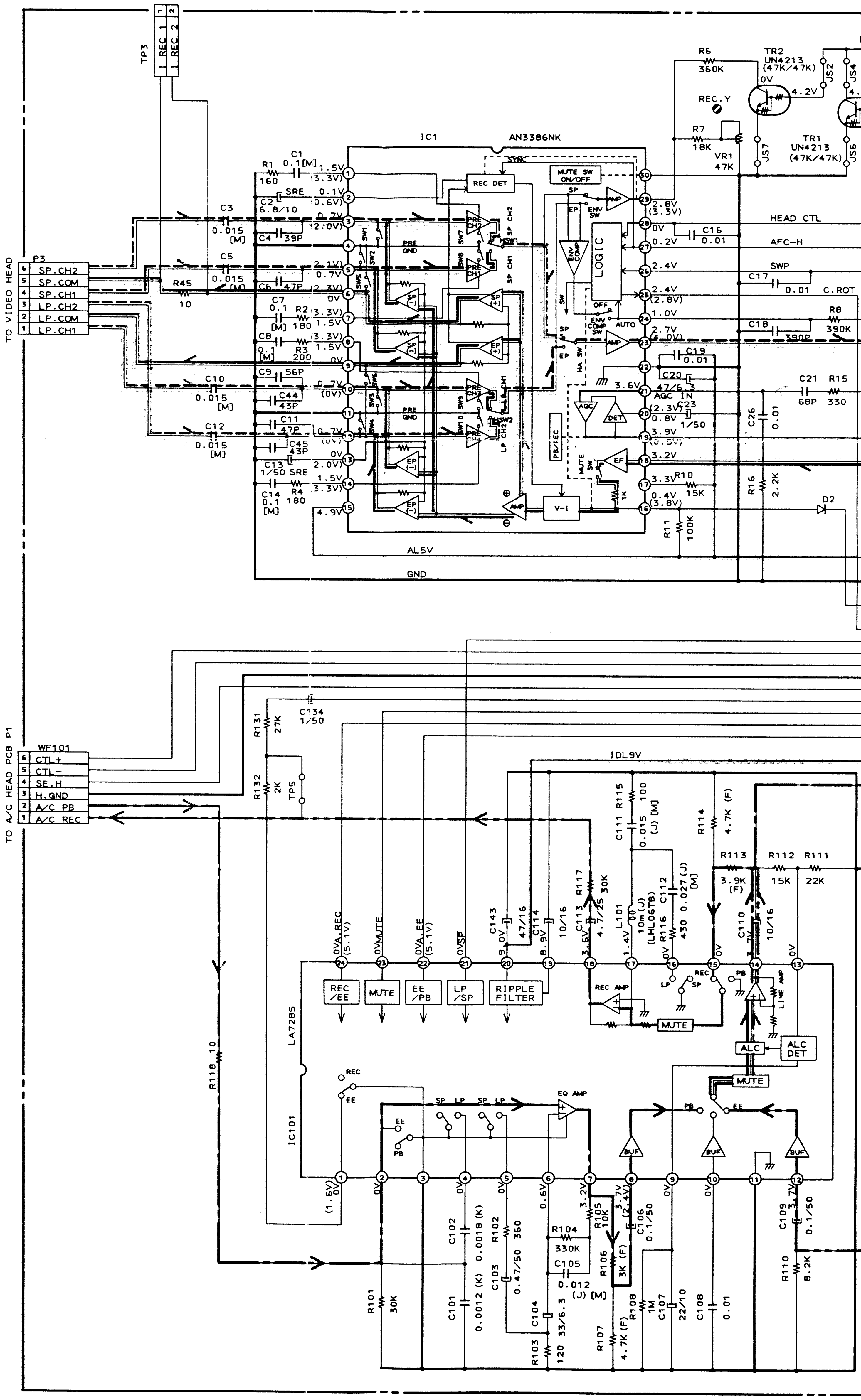



420475J
420475F
420475N
TR201
WF201
A501C

TR(A)PCB
VI184A50IC


TR411
A501D
420475J
F N
TR407

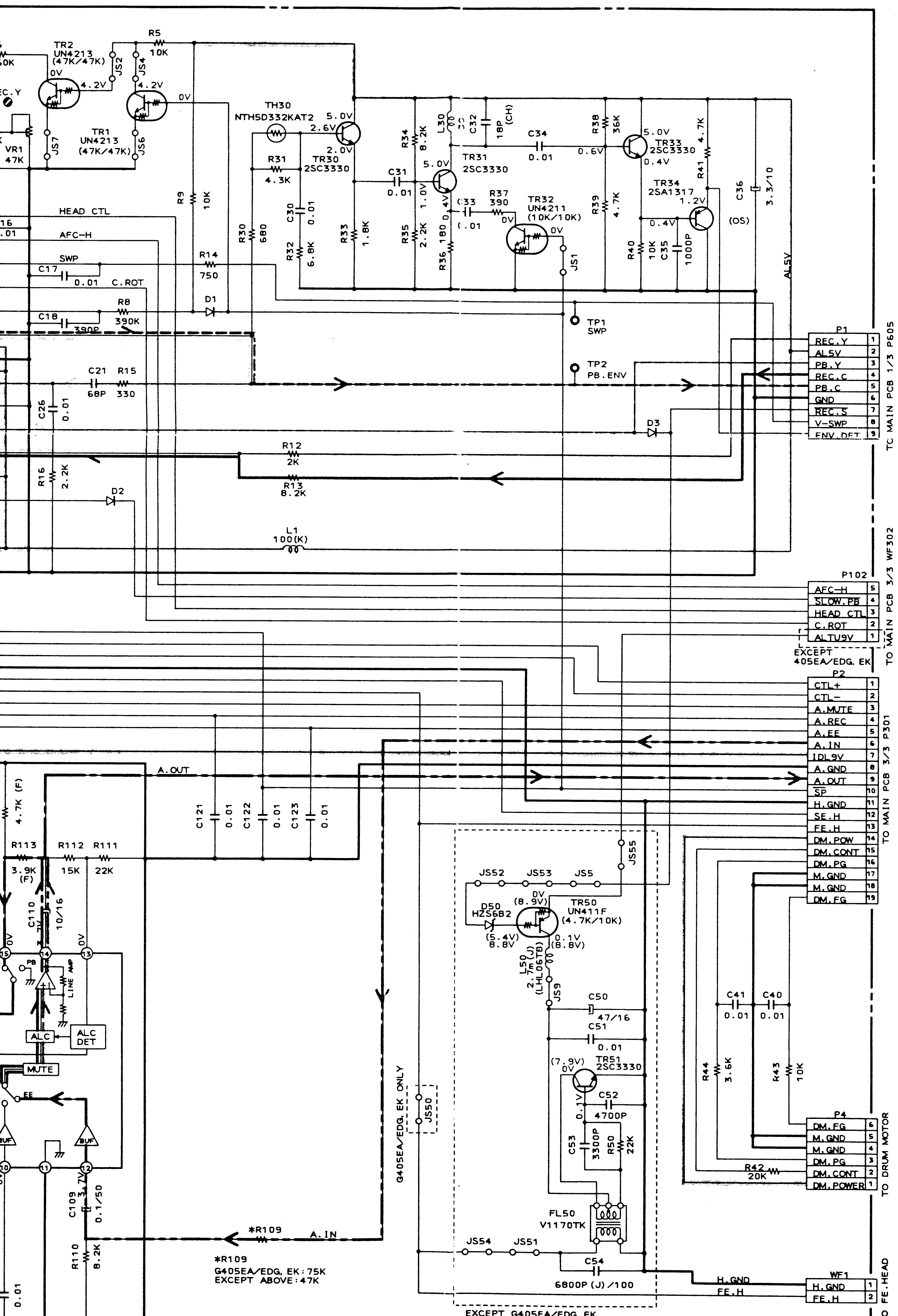
TR(B) PCB
VI184A50ID


TP3
1 REC 1
1 REC 2
IC1
AN3386NK
R1 160
C1 0.1[M]
C2 6.8/10
SRE
C3 0.015 [M]
C4 39P
C5 0.015 [M]
C6 47P
R45 10
C7 0.1 [M]
R2 180
C8 0.1 [M]
R3 200
C9 56P
C10 0.015 [M]
C44 43P
C11 47P
C12 0.015 [M]
C45 43P
C13 1/50 SRE
C14 0.1 [M]
R4 180
AL5V
GND
REC DET
MUTE SW ON/OFF
LOGIC
AGC
DET
PB/REC
MUTE SW
V-I
AMP
TO VIDEO HEAD
P3
SP.CH2
SP.COM
SP.CH1
LP.CH2
LP.COM
LP.CH1
R6 360K
R7 18K
REC.Y
VR1 47K
TR2 UN4213 (47K/47K)
TR1 UN4213 (47K/47K)
JS2
JS4
JS6
JS7
HEAD CTL
AFC-H
SWP
C.ROT
C16 0.01
C17 0.01
C18 390P
R8 390K
C19 0.01
C20 47/6.3
C21 68P
R15 330
C23 1/50
C26 0.01
R16 2.2K
R10 15K
R11 100K
D2
TO A/C HEAD PCB P1
WF101
CTL+
CTL-
SE.H
H.GND
A/C PB
A/C REC
R131 27K
R132 2K
TP5
C134 1/50
IDL9V
IC101
LA7285
REC /EE
MUTE
EE /PB
LP /SP
RIPPLE FILTER
REC AMP
LINE AMP
ALC
ALC DET
EQ AMP
BUF
R118 10
C143 47/16
C114 10/16
C113 4.7/25
R117 30K
C111 0.015 (J) [M]
R115 100
L101 10m (J) (LHL06TB)
R116 430
C112 0.027 (J) [M]
R114 4.7K (F)
R113 3.9K (F)
R112 15K
R111 22K
C110 10/16
R101 30K
C101 0.0012 (K)
C102 0.0018 (K)
C103 0.47/50
R102 360
R103 120
C104 33/6.3
R104 330K
C105 0.012 (J) [M]
R105 10K
C106 0.1/50
R106 3K (F)
R107 4.7K (F)
R108 1M
C107 22/10
C108 0.01
C109 0.1/50
R110 8.2K

PRE AMP PCB V1184A5020

B (POWER SUPPLY) LINE
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE
AUDIO PB SIGNAL LINE
AUDUI REC SIGNAL LINE

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) :REC MODE


TR2 UN4213 (47K/47K)
TR1 UN4213 (47K/47K)
R5 10K
JS2
JS4
JS6
JS7
VR1 47K
4.2V
0V
HEAD CTL
AFC-H
SWP
C17 0.01
C.ROT
C18 390P
R8 390K
R9 10K
R14 750
D1
C21 68P
R15 330
C26 0.01
R12 2K
R13 8.2K
R16 2.2K
D2
L1 100(K)
TH30 NTH5D332KAT2
TR30 2SC3330
R30 680
R31 4.3K
C30 0.01
R32 6.8K
R33 1.8K
C31 0.01
R34 8.2K
L30 22
C32 18P (CH)
TR31 2SC3330
R35 2.2K
R36 180
C33 .01
R37 390
TR32 UN4211 (10K/10K)
JS1
C34 0.01
R38 36K
TR33 2SC3330
R39 4.7K
R40 10K
C35 1000P
TR34 2SA1317
R41 4.7K
C36 3.3/10
(OS)
AL5V
TP1 SWP
TP2 PB.ENV
D3
P1
REC.Y 1
AL5V 2
PB.Y 3
REC.C 4
PB.C 5
GND 6
REC.S 7
V-SWP 8
ENV.DET 9
TO MAIN PCB 1/3 P605
P102
AFC-H 5
SLOW.PB 4
HEAD CTL 3
C.ROT 2
ALTU9V 1
EXCEPT 405EA/EDG, EK
TO MAIN PCB 3/3 WF302
P2
CTL+ 1
CTL- 2
A.MUTE 3
A.REC 4
A.EE 5
A.IN 6
IDL9V 7
A.GND 8
A.OUT 9
SP 10
H.GND 11
SE.H 12
FE.H 13
DM.POW 14
DM.CONT 15
DM.PG 16
M.GND 17
M.GND 18
DM.FG 19
TO MAIN PCB 3/3 P301
A.OUT
C121 0.01
C122 0.01
C123 0.01
R113 3.9K (F)
R112 15K
R111 22K
4.7K (F)
C110 10/16
PB
LINE AMP
ALC
ALC DET
MUTE
EE
BUF
C109 0.1/50
R110 8.2K
*R109
A.IN
*R109 G405EA/EDG, EK: 75K EXCEPT ABOVE: 47K
0.01
JS52
JS53
JS5
JS55
D50 HZS6B2
TR50 UN411F (4.7K/10K)
(8.9V)
(5.4V) 8.8V
0.1V (8.8V)
L50 2.7m(J) (LHL06TB)
JS9
C50 47/16
C51 0.01
TR51 2SC3330
(7.9V) 0V
C52 4700P
C53 3300P
R50 22K
FL50 V1170TK
JS54
JS51
C54 6800P (J)/100
EXCEPT G405EA/EDG, EK
JS50
G405EA/EDG, EK ONLY
C41 0.01
C40 0.01
R44 3.6K
R43 10K
P4
DM.FG 6
M.GND 5
M.GND 4
DM.PG 3
DM.CONT 2
DM.POWER 1
R42 20K
TO DRUM MOTOR
H.GND
FE.H
WF1
H.GND 1
FE.H 2
TO FE.HEAD

84A5020

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)
ALL DIODES ARE 1SS131T

PRE AMP
SCHEMATIC DIAGRAM
NO.18-5 V118806M A1

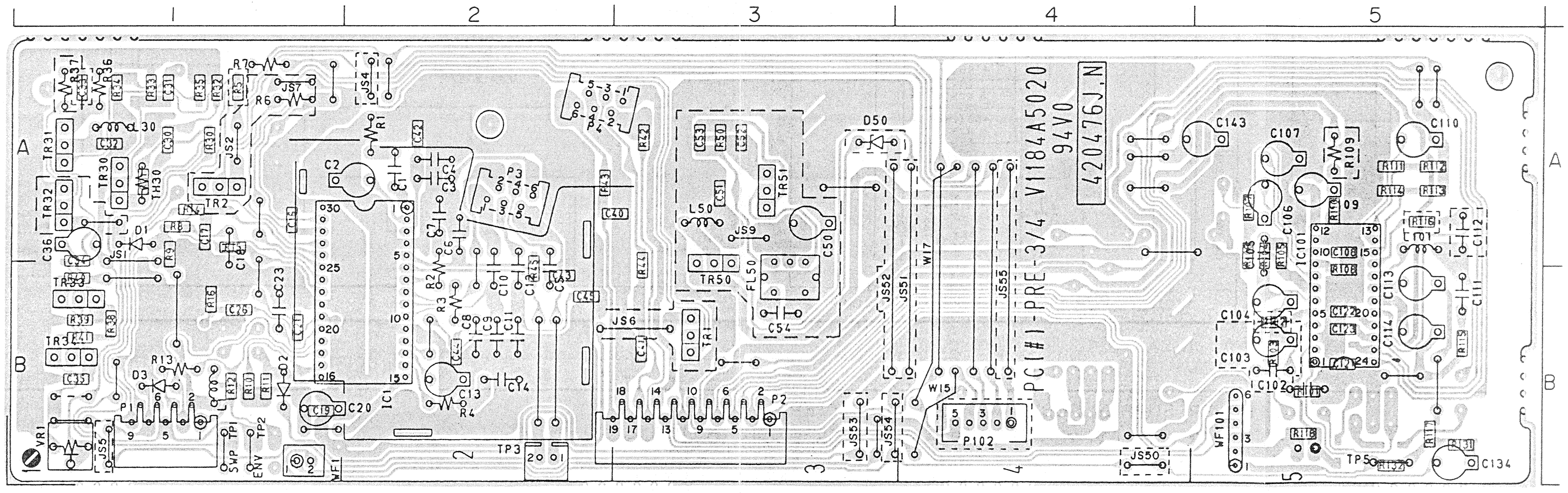
PRINCIPAL PARTS LOCATION

ICs	
IC1	A,B2
IC101	A,B5

WFs	
WF1	B1
WF101	B5

TRANSISTORs	
TR1	B3
TR2	A1
TR30	A1
TR31	A1
TR32	A1
TR33	B1
TR34	B1
TR50	A,B3
TR51	A3

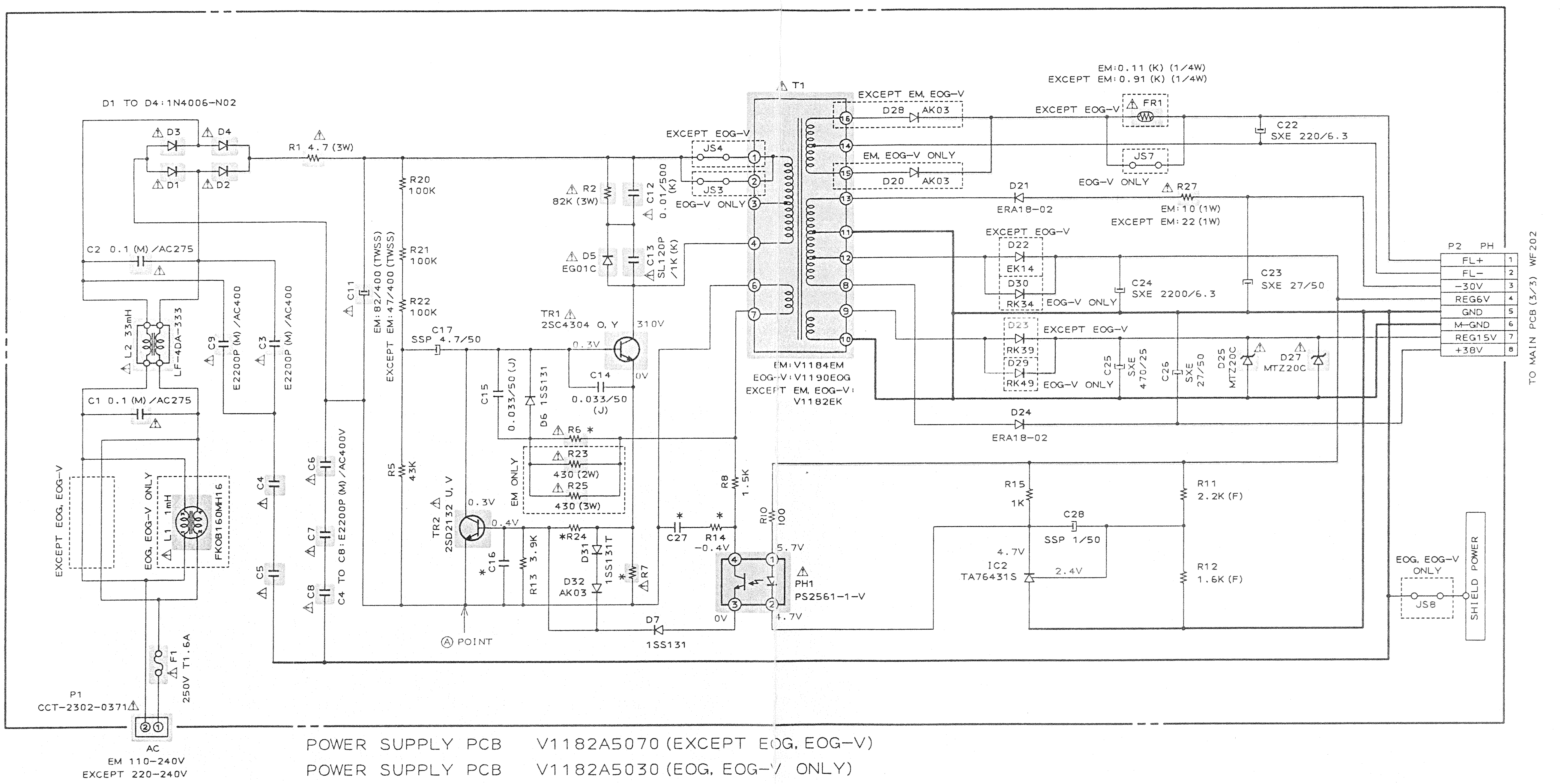
CONNECTORs	
P1	B1
P2	B3
P3	A2
P4	A2,3
P102	B4



1
2
3
4
5
A
B
TR31
TR30
TR32
TR33
TR34
TR2
TR50
TR51
TR1
IC1
IC101
P1
P2
P3
P4
P102
D1
D3
D2
D50
L30
L50
FL50
JS1
JS2
JS4
JS5
JS6
JS7
JS9
JS50
JS51
JS52
JS53
JS54
JS55
W15
W17
WF1
WF101
VR1
TP1
TP2
TP3
TP5
SWP
ENV
TH30
R1
R2
R3
R4
R6
R7
R13
R36
R37
R109
C2
C13
C20
C23
C36
C54
C103
C104
C106
C107
C110
C111
C112
C113
C114
C134
C143
PC(#1)-PRE-3/4 V1184A5020
94V0
420476J.N

PRE AMP PCB V1184A5020

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


D1 TO D4: 1N4006-N02
⚠ D3
⚠ D4
⚠ D1
⚠ D2
R1 4.7 (3W)
C2 0.1 (M) /AC275
L2 33mH
LF-4DA-333
C9 E2200P (M) /AC400
C3 E2200P (M) /AC400
C1 0.1 (M) /AC275
EXCEPT EOG, EOG-V
EOG, EOG-V ONLY
L1 1mH
FK0B160MH16
C4
C5
C6
C7
C8
C4 TO C8: E2200P (M) /AC400V
C11
EM: 82/400 (TWSS)
EXCEPT EM: 47/400 (TWSS)
R20 100K
R21 100K
R22 100K
R5 43K
F1 250V T1.6A
P1 CCT-2302-0371⚠
AC
EM 110-240V
EXCEPT 220-240V
C17 SSP 4.7/50
TR1 ⚠ 2SC4304 O, Y
310V
0.3V
C14 0.033/50 (J)
0V
C15 0.033/50 (J)
D6 1SS131
⚠ R2 82K (3W)
C12 0.01/500 (K)
⚠ D5 EG01C
C13 SL120P /1K (K)
EXCEPT EOG-V
JS4
JS3
EOG-V ONLY
⚠ R6 *
EM ONLY
⚠ R23 430 (2W)
⚠ R25 430 (3W)
TR2 ⚠ 2SD2132 U, V
0.3V
0.4V
*R24
* C16
R13 3.9K
D31 1SS131T
D32 AK03
* ⚠ R7
Ⓐ POINT
D7 1SS131
⚠ T1
EM: V1184EM
EOG-V: V1190EOG
EXCEPT EM, EOG-V: V1182EK
EXCEPT EM, EOG-V
D28 AK03
EM, EOG-V ONLY
D20 AK03
R8 1.5K
* C27
* R14 -0.4V
R10 100
5.7V
⚠ PH1 PS2561-1-V
0V
4.7V
EM: 0.11 (K) (1/4W)
EXCEPT EM: 0.91 (K) (1/4W)
EXCEPT EOG-V ⚠ FR1
JS7
EOG-V ONLY
C22 SXE 220/6.3
D21 ERA18-02
⚠ R27
EM: 10 (1W)
EXCEPT EM: 22 (1W)
EXCEPT EOG-V
D22 EK14
D30 RK34
EOG-V ONLY
C24 SXE 2200/6.3
C23 SXE 27/50
D23 RK39
D29 RK49
EXCEPT EOG-V
EOG-V ONLY
C25 SXE 470/25
C26 SXE 27/50
D25 MTZ20C
⚠ D27 MTZ20C
D24 ERA18-02
R15 1K
C28 SSP 1/50
R11 2.2K (F)
R12 1.6K (F)
IC2 TA76431S
4.7V
2.4V
P2 PH
FL+
FL-
-30V
REG6V
GND
M-GND
REG15V
+38V
TO MAIN PCB (3/3) WF202
EOG, EOG-V ONLY
JS8
SHIELD POWER

POWER SUPPLY PCB V1182A5070 (EXCEPT EOG, EOG-V)
POWER SUPPLY PCB V1182A5030 (EOG, EOG-V ONLY)

	*					
	R6	R7	R24	C16	R14	C27
EXCEPT EM	150 (2W)	1 (2W)	5.1K	X4700P (M)	1.5K	X1500P (M)
EM	430 (2W)	0.68 (2W)	3.9K	B1000P (K)	470	X4700P (M)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF (P=PF) 16WV (M)
ALL ELECTROLYTIC CAPACITORS IN µF/WV (M)

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

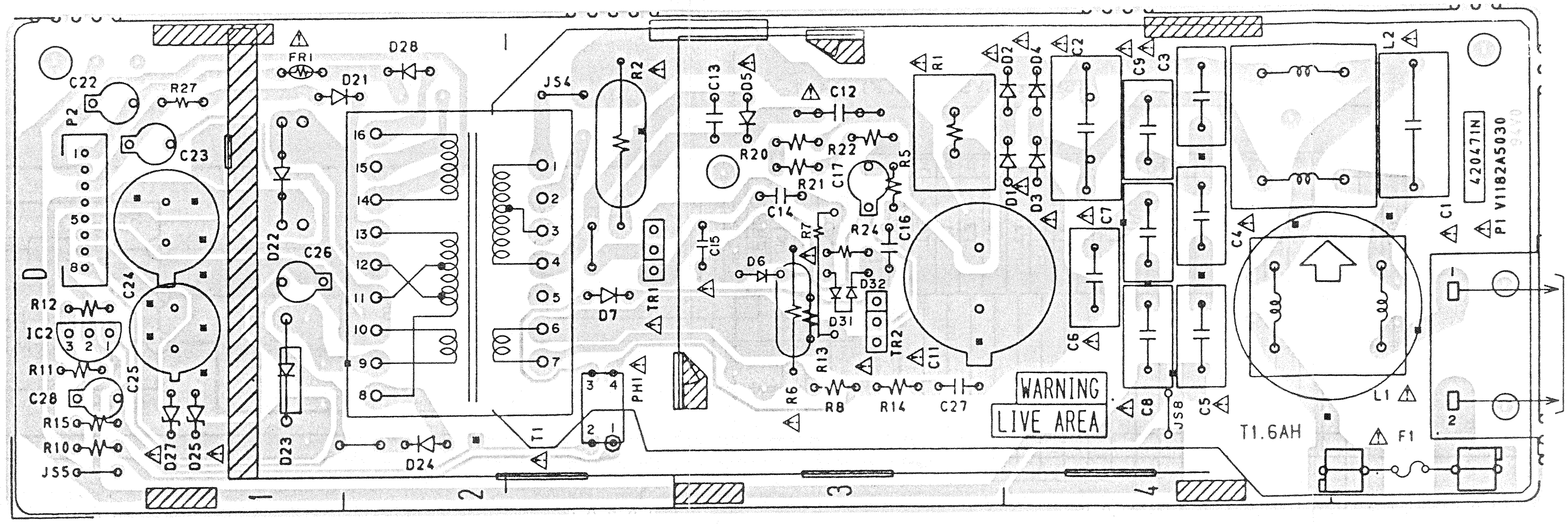
AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

▨ : B (POWER SUPPLY) LINE

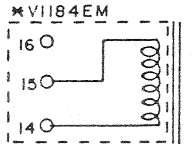
*INDICATED VOLTAGES WERE MEASURED DURING E-E MODE.
THE DC VOLTMETER'S NEGATIVE INPUT WAS CONNECTED TO THE Ⓐ POINT WHEN THE PRIMARY SECTION WAS MEASURED.
*THE PRIMARY INPUT WAS AC 220V.

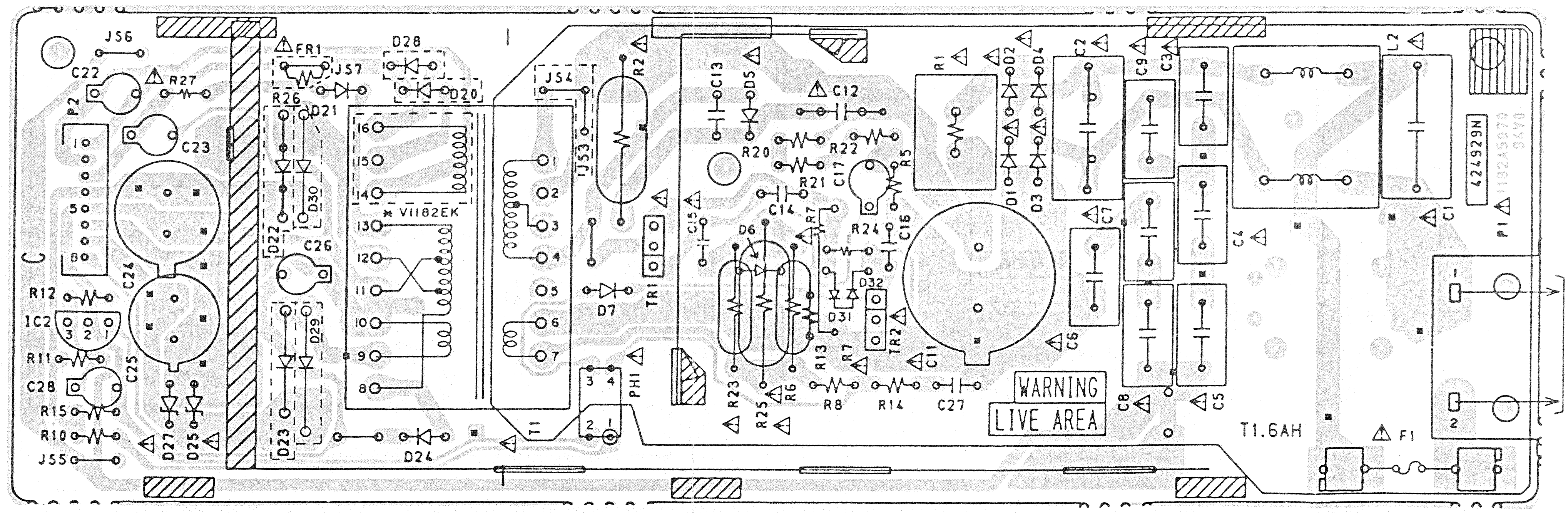
POWER SUPPLY SCHEMATIC DIAGRAM

NO.18-6 V118807M
A2


FR1
D28
D21
C22
R27
P2
C23
D
R12
IC2
R11
C28
R15
R10
JS5
C24
C25
D27
D25
D22
C26
D23
D24
T1
JS4
R2
D7
TR1
PH1
C13
D5
C12
R20
R22
R21
C17
R5
C14
C15
D6
R7
R24
C16
D32
D31
R13
TR2
C11
R6
R8
R14
C27
WARNING
LIVE AREA
R1
D2
D4
D1
D3
C2
C9
C3
C7
C6
C8
JS8
C5
C4
L2
C1
L1
F1
T1.6AH
42047IN
P1 V1182A5030
TO AC PLUG

POWER SUPPLY PCB V1182A5030


*V1184EM
16
15
14

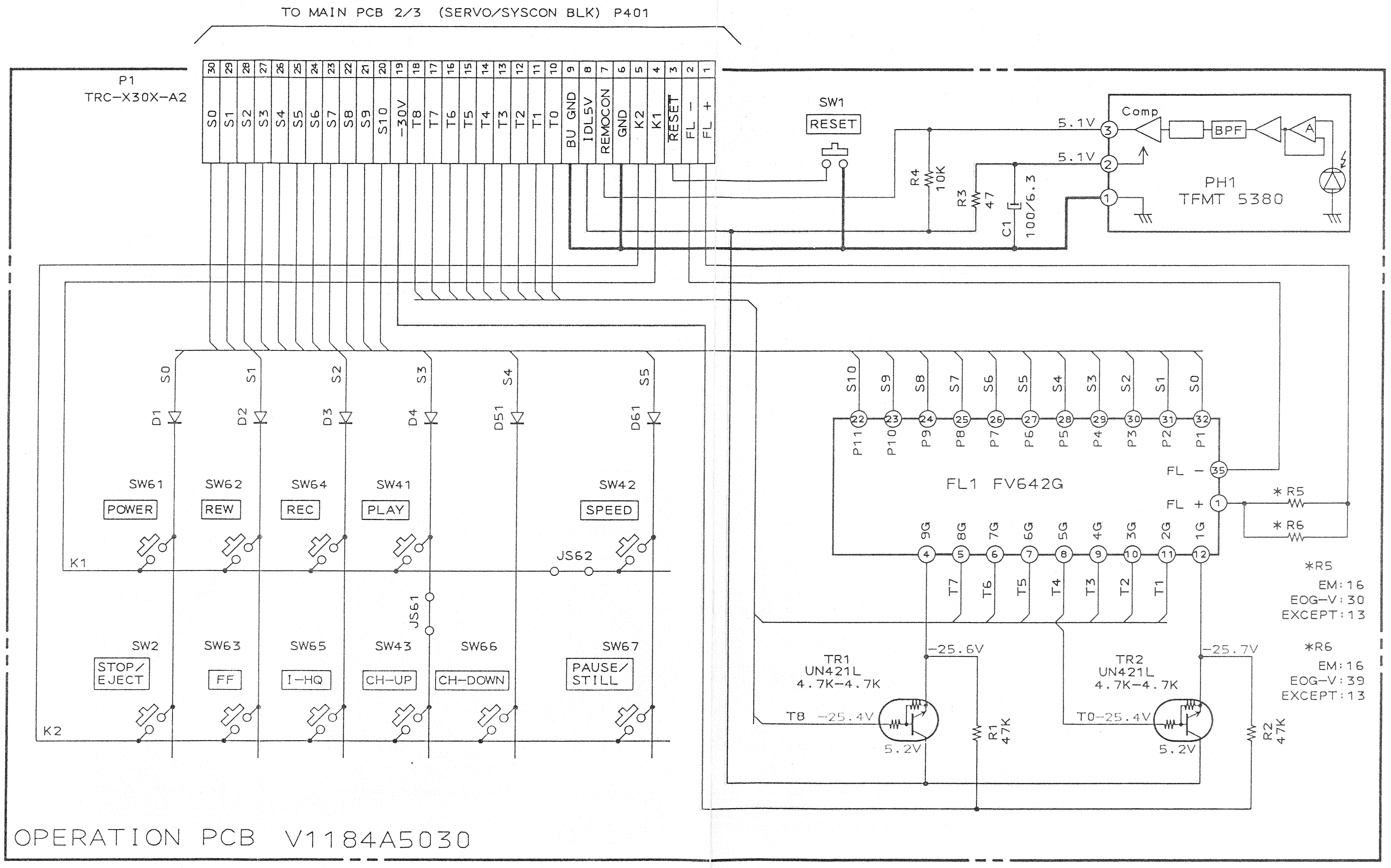

JS6
C22
R27
FR1
JS7
D28
D20
R26
D21
D30
JS4
JS3
R2
P2
C23
C
R12
IC2
R11
C28
R15
R10
JS5
C24
C25
D27
D25
D22
C26
D29
D23
D24
*V1182EK
T1
D7
TR1
PH1
C13
D5
C12
R20
R22
R21
C17
R5
C14
C15
D6
R7
R24
C16
D32
D31
R13
TR2
C11
R23
R25
R6
R8
R14
C27
WARNING
LIVE AREA
R1
D2
D4
D1
D3
C2
C9
C3
C7
C6
C8
C5
C4
L2
C1
F1
T1.6AH
424929N
P1 V1182A5070
TO AC PLUG

POWER SUPPLY PCB V1182A5070

WARNING. ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

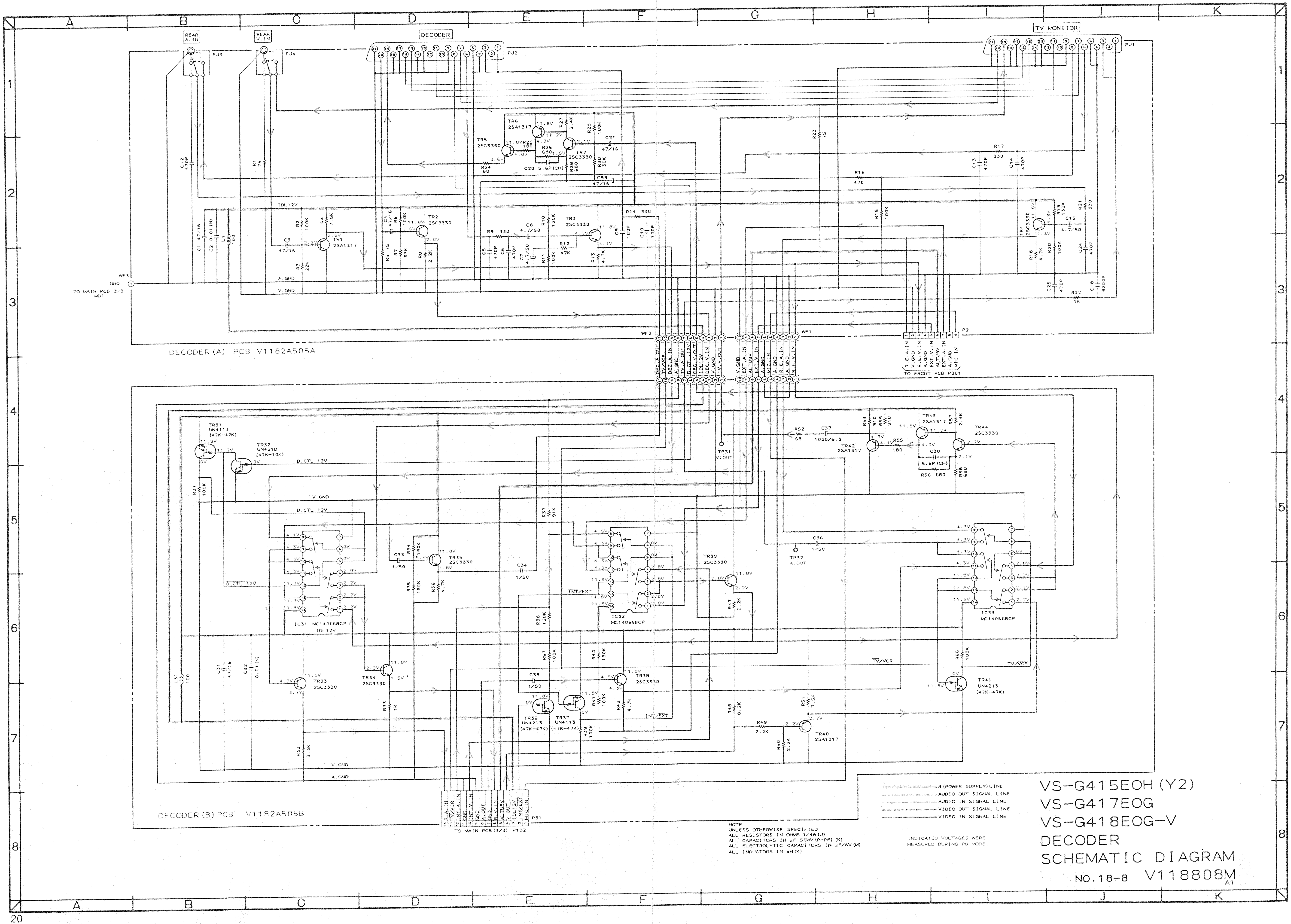

TO MAIN PCB 2/3 (SERVO/SYSCON BLK) P401
P1
TRC-X30X-A2
30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
S0 S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 -30V T8 T7 T6 T5 T4 T3 T2 T1 T0 BU GND IDL5V REMOCON GND K2 K1 RESET FL - FL +
SW1
RESET
R4
10K
R3
47
C1
100/6.3
5.1V
5.1V
Comp
BPF
A
PH1
TFMT 5380
S0 S1 S2 S3 S4 S5
D1 D2 D3 D4 D51 D61
SW61
POWER
SW62
REW
SW64
REC
SW41
PLAY
SW42
SPEED
K1
JS62
JS61
SW2
STOP/
EJECT
SW63
FF
SW65
I-HQ
SW43
CH-UP
SW66
CH-DOWN
SW67
PAUSE/
STILL
K2
S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 S0
22 23 24 25 26 27 28 29 30 31 32
P11 P10 P9 P8 P7 P6 P5 P4 P3 P2 P1
FL1 FV642G
FL - 35
FL + 1
*R5
*R6
9G 8G 7G 6G 5G 4G 3G 2G 1G
4 5 6 7 8 9 10 11 12
T7 T6 T5 T4 T3 T2 T1
*R5
EM:16
EOG-V:30
EXCEPT:13
*R6
EM:16
EOG-V:39
EXCEPT:13
-25.6V
-25.7V
TR1
UN421L
4.7K-4.7K
TR2
UN421L
4.7K-4.7K
T8 -25.4V
T0-25.4V
5.2V
5.2V
R1
47K
R2
47K
OPERATION PCB V1184A5030

B(POWER SUPPLY)LINE

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV(M)
ALL DIODES IS 1SS131T-77

OPERATION
SCHEMATIC DIAGRAM
NO.18-7 V118805M
A3

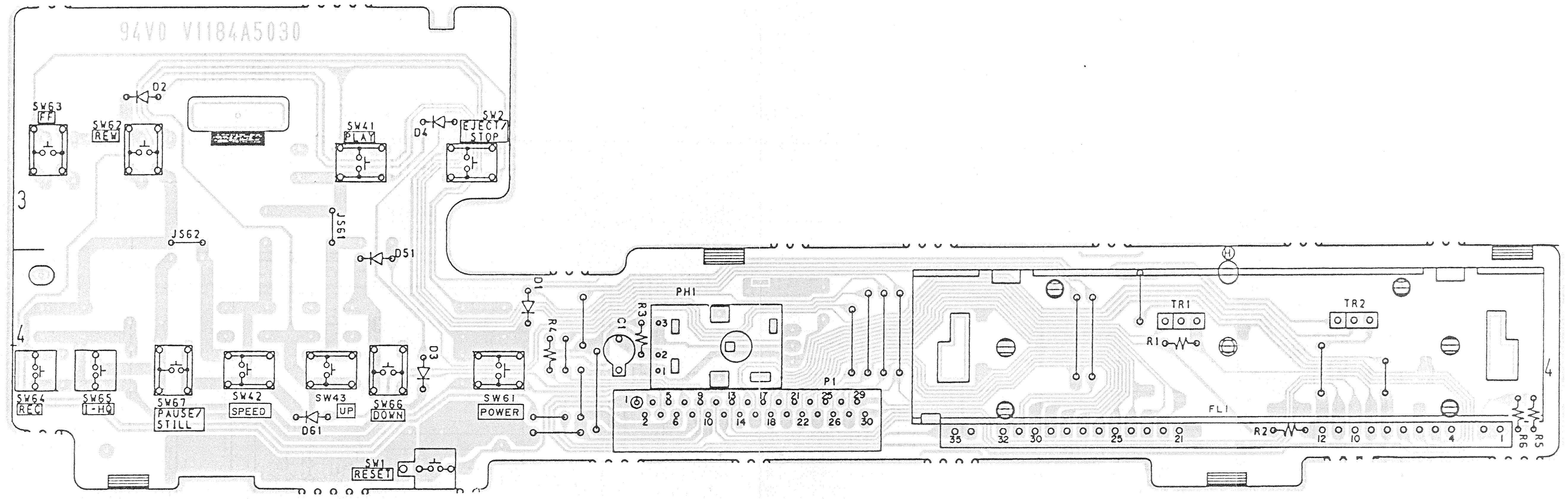

REAR A.IN
PJ3
REAR V.IN
PJ4
DECODER
PJ2
TV MONITOR
PJ1
TR6 2SA1317
TR5 2SC3330
TR7 2SC3330
TR1 2SA1317
TR2 2SC3330
TR3 2SC3330
TR4 2SC3330
IDL12V
A.GND
V.GND
WF3 GND
TO MAIN PCB 3/3 MG1
WF2
WF1
P2
TO FRONT PCB P801
DECODER (A) PCB V1182A505A
TR31 UN4113 (47K-47K)
TR32 UN421D (47K-10K)
D.CTL 12V
V.GND
TP31 V.OUT
TR42 2SA1317
TR43 2SA1317
TR44 2SC3330
TR35 2SC3330
TR39 2SC3330
TP32 A.OUT
IC31 MC14066BCP
IC32 MC14066BCP
IC33 MC14066BCP
INT/EXT
TR33 2SC3330
TR34 2SC3330
TR36 UN4213 (47K-47K)
TR37 UN4113 (47K-47K)
TR38 2SC3330
TR40 2SA1317
TR41 UN4213 (47K-47K)
TV/VCR
A.GND
DECODER (B) PCB V1182A505B
P31
TO MAIN PCB (3/3) P102

B (POWER SUPPLY) LINE
AUDIO OUT SIGNAL LINE
AUDIO IN SIGNAL LINE
VIDEO OUT SIGNAL LINE
VIDEO IN SIGNAL LINE

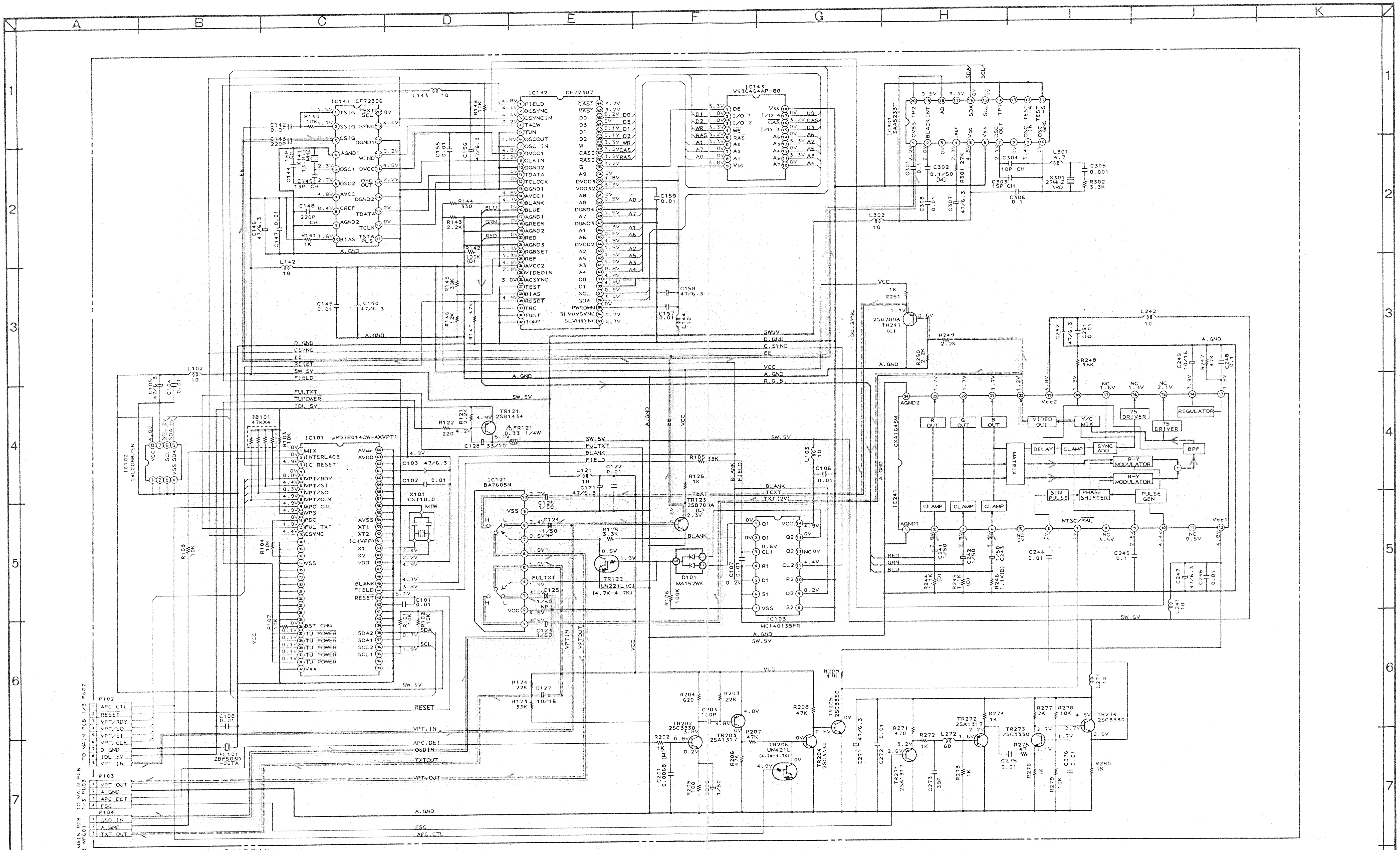
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF 50WV (P-PF) (K)
ALL ELECTROLYTIC CAPACITORS IN µF/WV (M)
ALL INDUCTORS IN µH (K)

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

VS-G415EOH (Y2)
VS-G417EOG
VS-G418EOG-V
DECODER
SCHEMATIC DIAGRAM
NO. 18-8 V118808M A1


94V0 V1184A5030
D2
SW63
FF
SW62
REW
SW41
PLAY
D4
SW2
EJECT/
STOP
3
JS61
JS62
D51
D1
PH1
R3
C1
R4
TR1
TR2
R1
4
SW64
REC
SW65
I-HQ
SW67
PAUSE/
STILL
SW42
SPEED
SW43
UP
SW66
DOWN
D3
D61
SW61
POWER
P1
FL1
R2
R5
R6
SW1
RESET

OPERATION PCB V1184A5030



IC141 CF72306
IC142 CF72307
IC143 VS3C464AP-80
IC301 SAA5233T
IC101 μPD78014CW-AXVPT1
IC102 24LC08B/SN
IC121 BA7605N
IC103 MC14013BFR
IC241 CXA1645M
TR121 2SB1434
TR122 UN221L (C)
TR123 2SB709A (C)
TR241 2SB709A (C)
TR202 2SC3330
TR203 2SA1317
TR204 2SC3330
TR205 2SC3330
TR206 UN421L
TR271 2SA1317
TR272 2SA1317
TR273 2SC3330
TR274 2SC3330
D101 MA152WK
X101 CST10.0 MTW
X301 27MHZ 3RD
FL101 ZBF503D -00TA
P102
P103
P104
TO MAIN PCB 1/3 P602
TO MAIN PCB 1/3 P603
TO MAIN PCB 3/3 WF601
APC CTL
RESET
VPT/RDY
VPT/SO
VPT/SI
VPT/CLK
D.GND
IDL 5V
VPT IN
VPT OUT
A.GND
APC DET
FSC
OSD IN
TXT OUT
VIDEO OUT
Y/C MIX
75 DRIVER
REGULATOR
DELAY
CLAMP
SYNC ADD
BPF
MATRIX
R-Y MODULATOR
B-Y MODULATOR
SIN PULSE
PHASE SHIFTER
PULSE GEN
R OUT
G OUT
B OUT
NTSC/PAL
SW.5V
VCC
FULTXT
TUPOWER
BLANK
FIELD
C.SYNC
EE
A B C D E F G H I J K
1 2 3 4 5 6 7 8

VPST/PDCT PCB V1184A5040

▨ B (POWER SUPPLY) LINE
▨ Y IN (TUNER) SIGNAL LINE
- - - Y VPT SIGNAL LINE
―― CHROMA IN (TUNER) SIGNAL LINE
- - - CHROMA VPT SIGNAL LINE

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

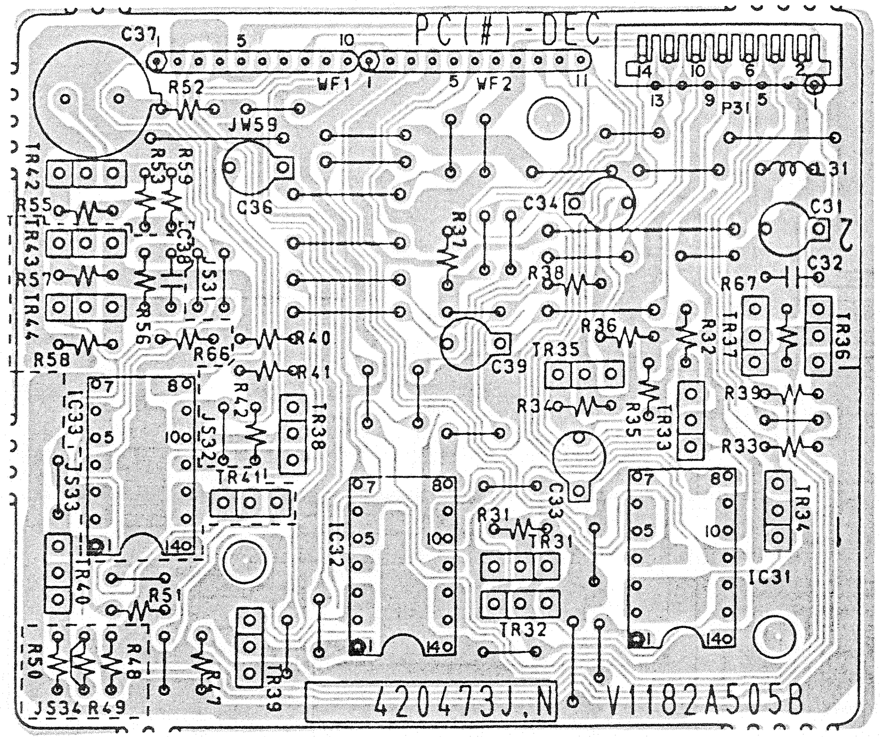
AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LE FABRICANT

NOTE:
UNLESS OTHERWISE SPECIFIED
0.01μF/0.1μF CAPACITORS IN 25W/
ALL CAPACITORS IN μF (P=PF) 50W/(J)
ALL RESISTORS IN OHMS 1/4W(J) or 1/10W(J)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μF (J)

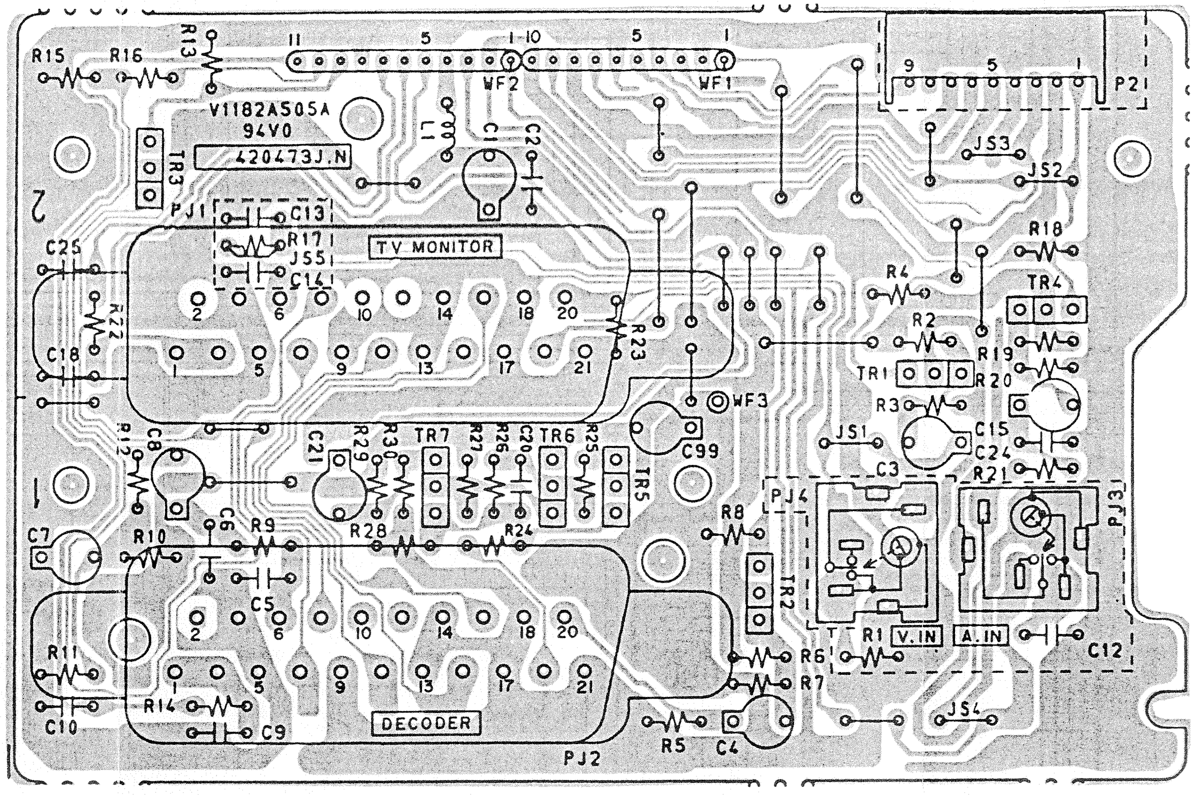
INDICATED VOLTAGES WERE MEASURED WHEN A PDC SIGNAL WAS BEING RECEIVED.

VS-G418EOG-V
VPST
SCHEMATIC DIAGRAM

NO.18-9 V118426M A1

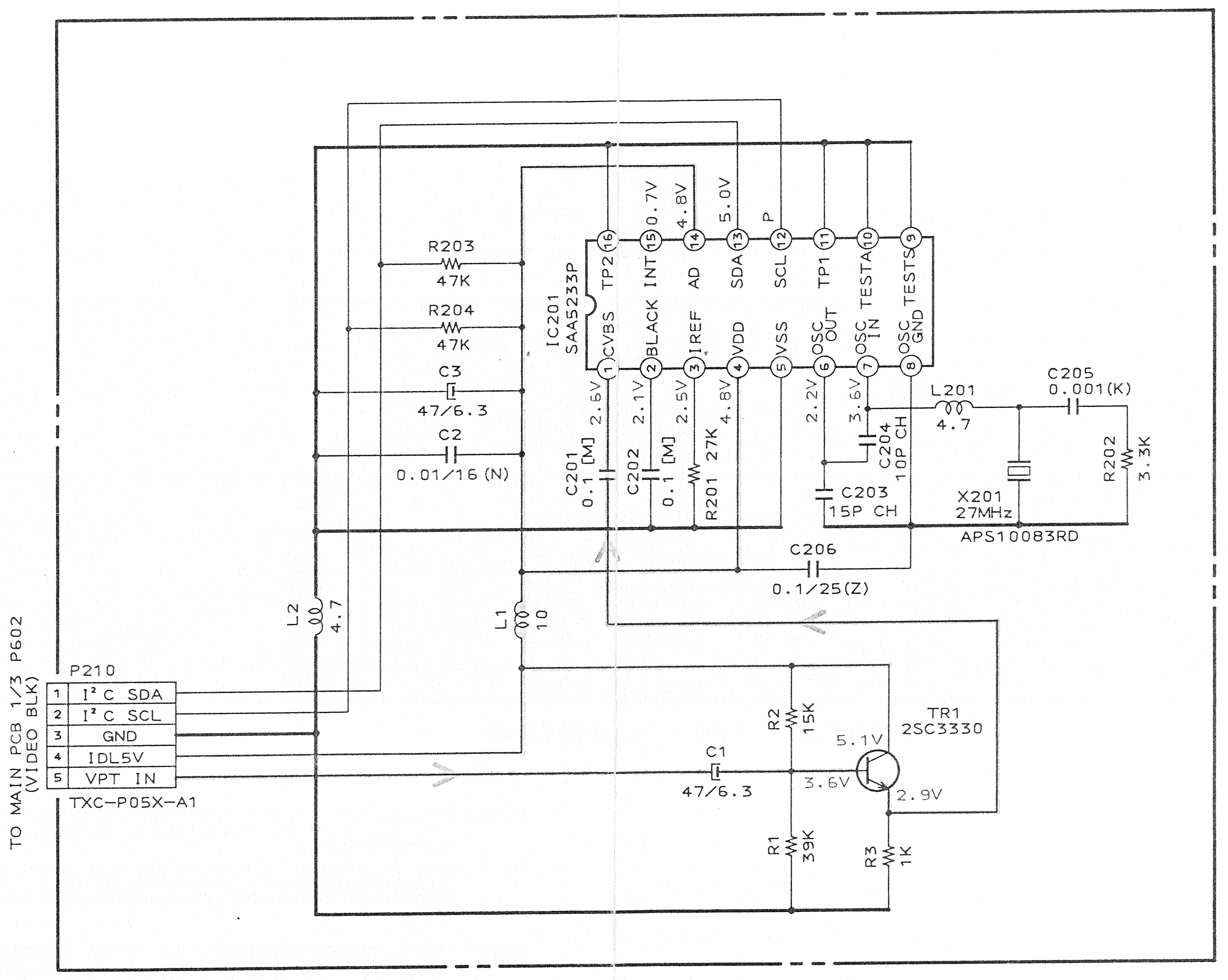

PC(#1)-DEC
WF1
WF2
P31
JW59
C36
C34
C31
C32
C39
L31
TR35
TR36
TR37
TR38
TR33
TR34
TR31
TR32
TR39
TR40
TR41
TR42
TR43
TR44
IC31
IC32
IC33
JS31
JS32
JS33
JS34
420473J.N
V1182A505B

DECODER(B)PCB V1182A505B


V1182A505A
94V0
420473J.N
WF1
WF2
WF3
P21
PJ1
PJ2
PJ3
PJ4
TV MONITOR
DECODER
V.IN
A.IN
TR1
TR2
TR3
TR4
TR5
TR6
TR7
JS1
JS2
JS3
JS4
JS5
L1
C99

DECODER(A)PCB V1182A505A

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.



IC201
SAA5233P
TP2 16
BLACK INT 15
AD 14
SDA 13
SCL 12
TP1 11
TESTA 10
TESTS 9
CVBS 1
BLACK 2
IREF 3
VDD 4
VSS 5
OSC OUT 6
OSC IN 7
OSC GND 8
0.7V
4.8V
5.0V
P
2.6V
2.1V
2.5V
4.8V
2.2V
3.6V
R203
47K
R204
47K
C3
47/6.3
C2
0.01/16(N)
C201
0.1 [M]
C202
0.1 [M]
R201 27K
C203
15P CH
C204
10P CH
L201
4.7
C205
0.001(K)
R202
3.3K
X201
27MHz
APS10083RD
C206
0.1/25(Z)
L2
4.7
L1
10
TO MAIN PCB 1/3 P602
(VIDEO BLK)
P210
1 I²C SDA
2 I²C SCL
3 GND
4 IDL5V
5 VPT IN
TXC-P05X-A1
C1
47/6.3
R2
15K
R1
39K
R3
1K
TR1
2SC3330
5.1V
3.6V
2.9V

VPS/PDC PCB V1182A5040

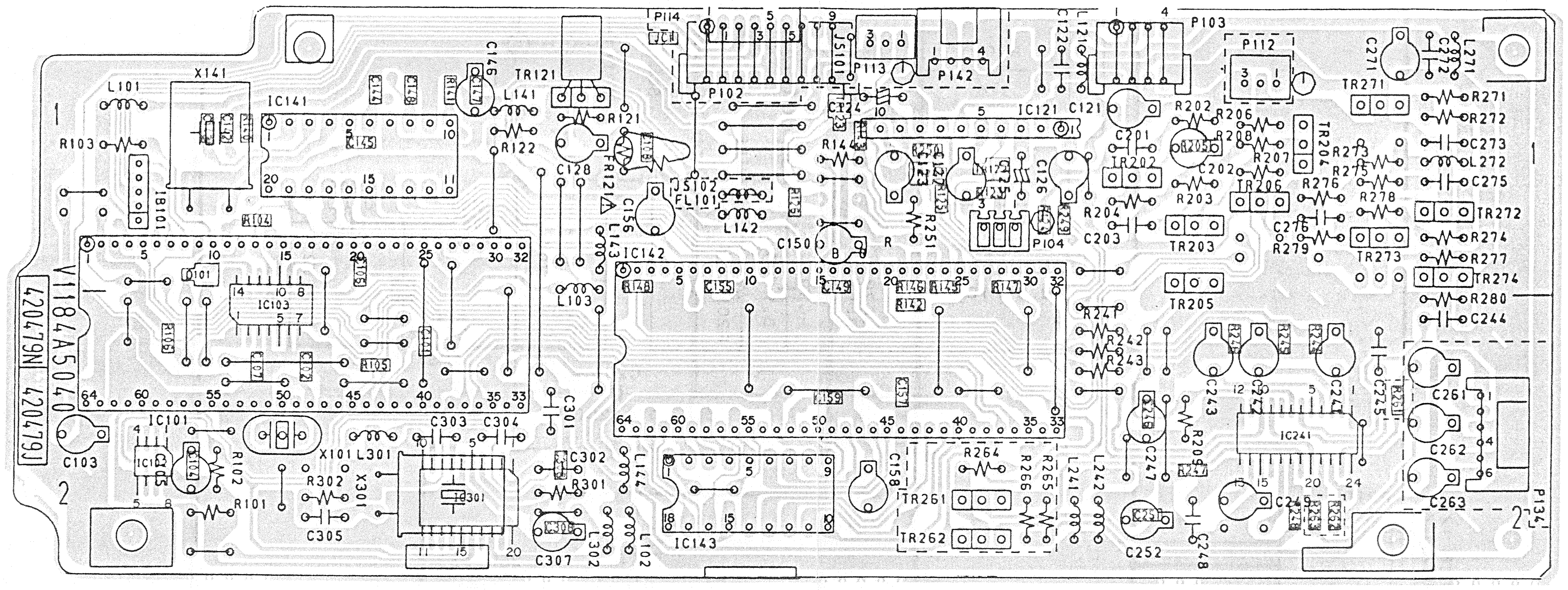
B (POWER SUPPLY) LINE

VIDEO SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E MODE.
(NO SIGNAL WAS BEING INPUT.)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF (P=PF) 50WV (J)
ALL ELECTROLYTIC CAPACITORS IN µF/WV (M)
ALL INDUCTORS IN µH (J)
[M] IS MYLAR CAPACITOR

VPS/PDC
SCHEMATIC DIAGRAM
NO.18-10 V118425M A3

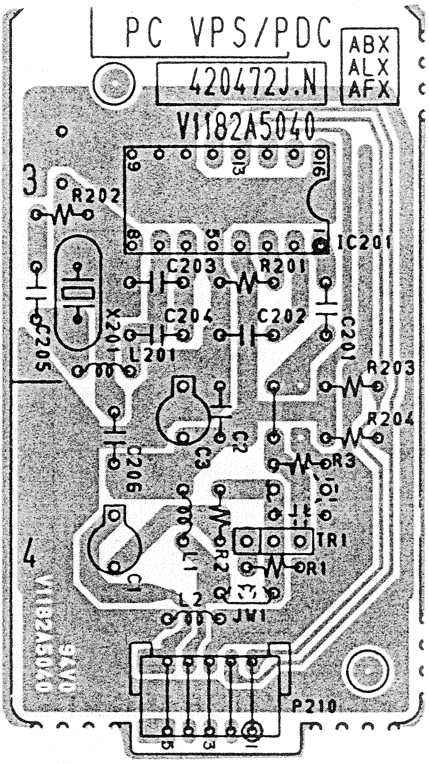

V1184A5040
420479N
420479J
X141
L101
R103
IB101
IC141
TR121
L141
R121
R122
C128
C146
R121A
L143
C156
IC142
L103
IC101
IC103
IC102
C103
R102
R101
X101
L301
X301
R302
C305
C303
C304
IC301
C301
C302
R301
C307
L302
L102
L144
IC143
P114
P102
JS101
JS102
FL101
L142
P113
P142
C124
R144
IC121
C121
C122
L121
C126
R251
C150
P104
C158
R264
R265
R266
TR261
TR262
L241
L242
C252
C248
P103
P112
C201
TR202
R202
R206
R208
R207
C202
R203
R204
C203
TR203
TR204
TR206
R276
R278
C276
R279
TR205
TR271
C271
C272
L271
R271
R272
R273
R275
C273
L272
C275
TR272
R274
R277
TR273
TR274
R280
C244
R241
R242
R243
C243
C242
C241
C245
IC241
C247
R209
C249
C261
C262
C263
P134

VPST/PDCT PCB V1184A5040

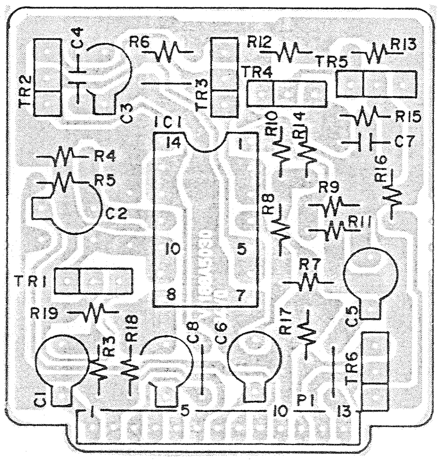
WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

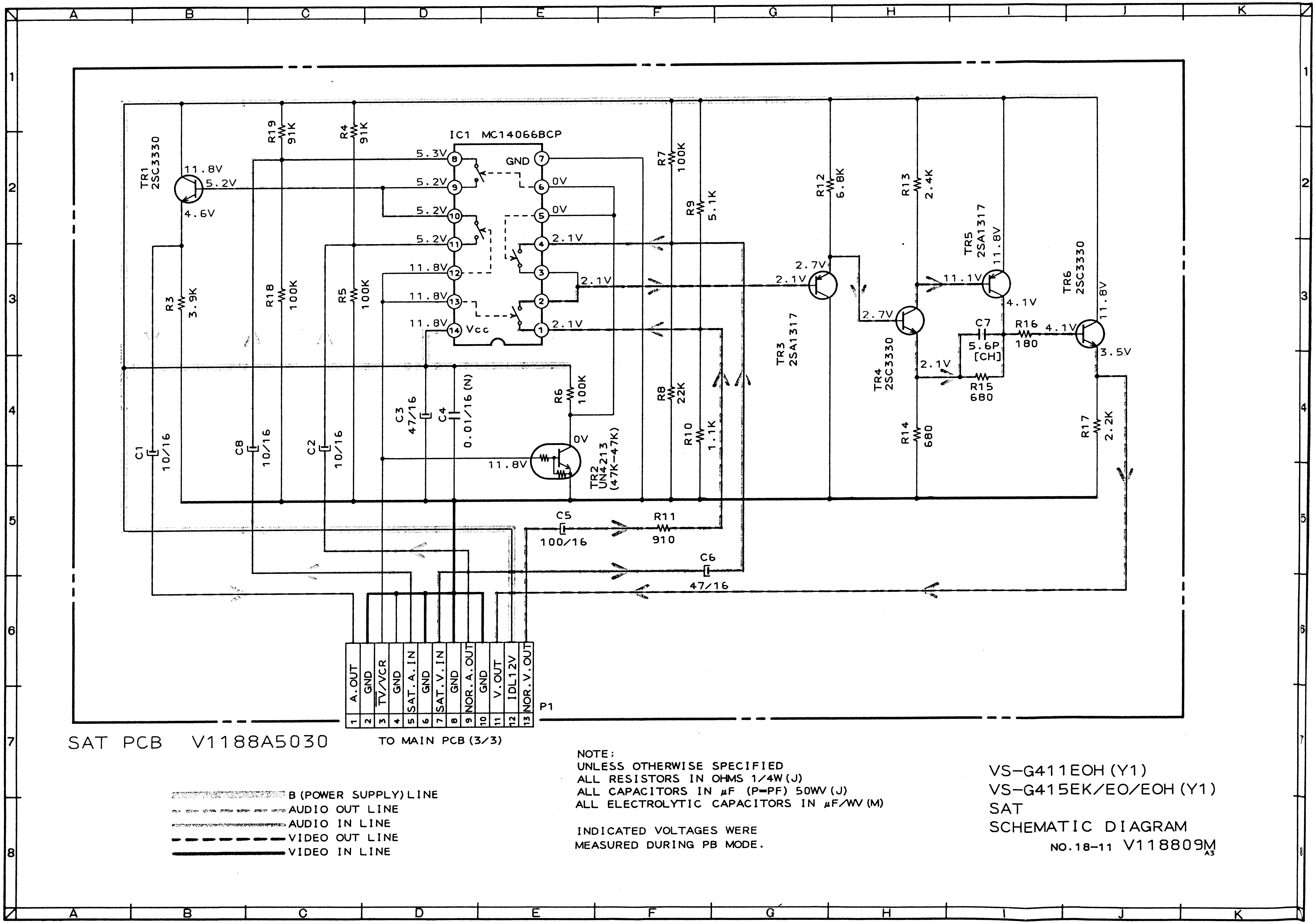
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


PC VPS/PDC
420472J.N
ABX
ALX
AFX
V1182A5040
3
R202
IC201
C203
R201
C204
C202
C201
X201
C205
L201
R203
R204
C2
C3
C206
R3
L1
R2
TR1
R1
C1
L2
JW1
4
V1182A5040
P210

VPS/PDC PCB
VI182A5040


TR2
C4
C3
R6
TR3
R12
TR4
TR5
R13
R15
C7
IC1
14
1
R10
R14
R4
R5
C2
R16
R8
R9
R11
10
5
TR1
8
7
R7
R19
R17
C5
R3
R18
C8
C6
C1
TR6
1
5
10
P1
13

SAT PCB V1188A5030


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
TR1
2SC3330
11.8V
5.2V
4.6V
R3
3.9K
C1
10/16
R19
91K
R18
100K
C8
10/16
R4
91K
R5
100K
C2
10/16
IC1 MC14066BCP
5.3V
5.2V
5.2V
5.2V
11.8V
11.8V
11.8V
Vcc
GND
0V
0V
2.1V
2.1V
2.1V
C3
47/16
C4
0.01/16 (N)
R6
100K
0V
11.8V
TR2
UN4213
(47K-47K)
C5
100/16
R11
910
C6
47/16
R7
100K
R9
5.1K
R8
22K
R10
1.1K
R12
6.8K
2.7V
2.1V
TR3
2SA1317
R13
2.4K
2.7V
TR4
2SC3330
2.1V
R14
680
TR5
2SA1317
11.8V
11.1V
4.1V
C7
5.6P
[CH]
R16
180
4.1V
R15
680
TR6
2SC3330
11.8V
3.5V
R17
2.2K
A.OUT
GND
TV/VCR
GND
SAT.A.IN
GND
SAT.V.IN
GND
NOR.A.OUT
GND
V.OUT
IDL12V
NOR.V.OUT
1
2
3
4
5
6
7
8
9
10
11
12
13
P1

SAT PCB V1188A5030

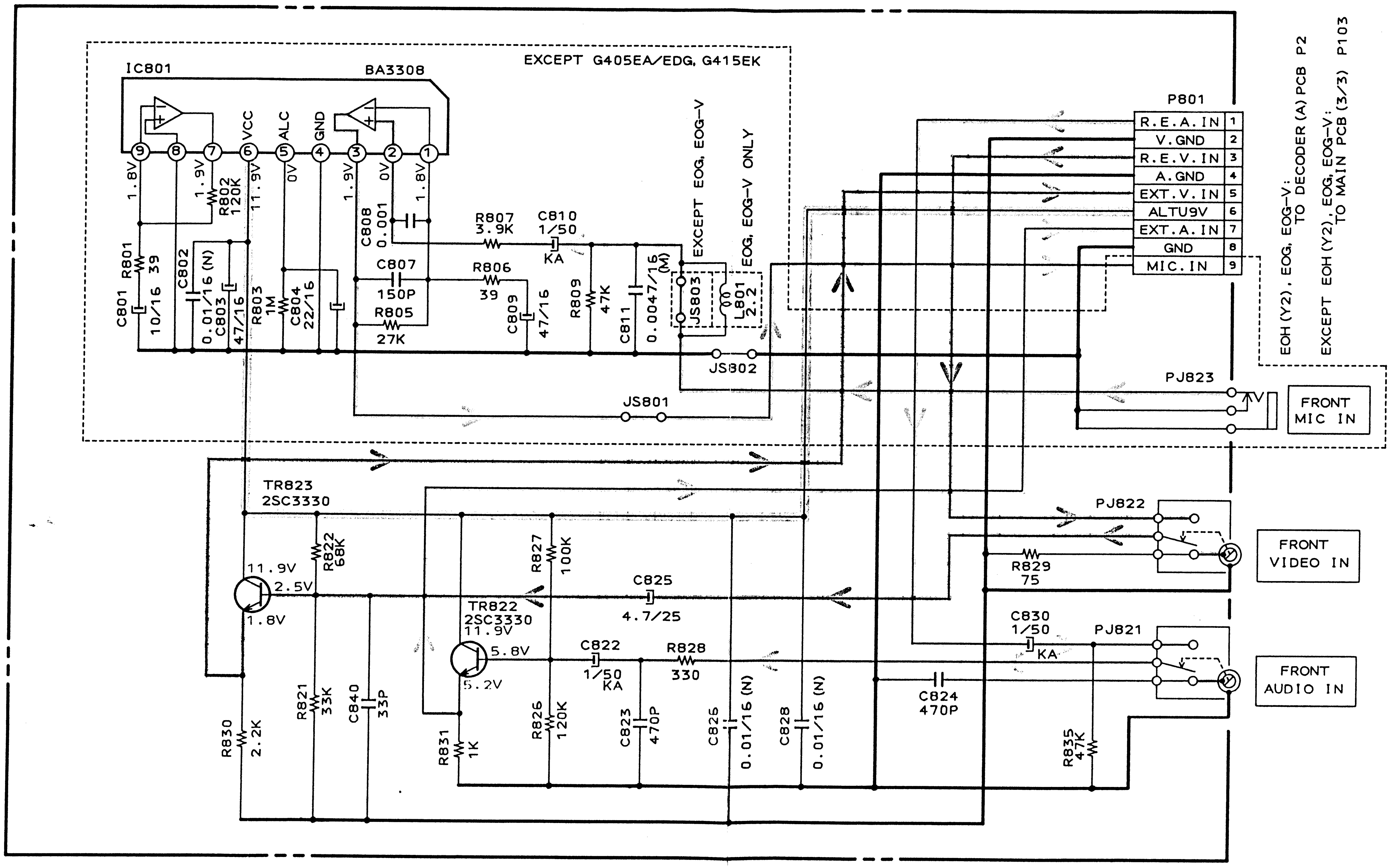
TO MAIN PCB (3/3)

B (POWER SUPPLY) LINE
AUDIO OUT LINE
AUDIO IN LINE
VIDEO OUT LINE
VIDEO IN LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF (P=PF) 50WV (J)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.

VS-G411EOH (Y1)
VS-G415EK/EO/EOH (Y1)
SAT
SCHEMATIC DIAGRAM
NO.18-11 V118809M A3


EXCEPT G405EA/EDG, G415EK
IC801
BA3308
VCC
ALC
GND
1.8V
1.9V
11.9V
0V
1.9V
0V
1.8V
R802 120K
R801 39
C801 10/16
C802 0.01/16 (N)
C803 47/16
R803 1M
C804 22/16
C808 0.001
C807 150P
R805 27K
R807 3.9K
C810 1/50 KA
R806 39
C809 47/16
R809 47K
C811 0.0047/16 (M)
EXCEPT EOG, EOG-V
EOG, EOG-V ONLY
JS803
L801 2.2
JS802
JS801
P801
R.E.A.IN 1
V.GND 2
R.E.V.IN 3
A.GND 4
EXT.V.IN 5
ALTU9V 6
EXT.A.IN 7
GND 8
MIC.IN 9
EOH (Y2), EOG, EOG-V: TO DECODER (A) PCB P2
EXCEPT EOH (Y2), EOG, EOG-V: TO MAIN PCB (3/3) P103
PJ823
FRONT MIC IN
TR823 2SC3330
11.9V
2.5V
1.8V
R822 68K
R827 100K
C825 4.7/25
TR822 2SC3330
11.9V
5.8V
5.2V
C822 1/50 KA
R828 330
PJ822
FRONT VIDEO IN
R829 75
C830 1/50 KA
PJ821
FRONT AUDIO IN
C824 470P
R830 2.2K
R821 33K
C840 33P
R831 1K
R826 120K
C823 470P
C826 0.01/16 (N)
C828 0.01/16 (N)
R835 47K

FRONT PCB V1188A5020

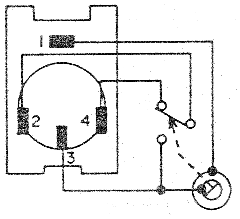
NOTE;
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF (P=PF) 50WV (K)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (K)

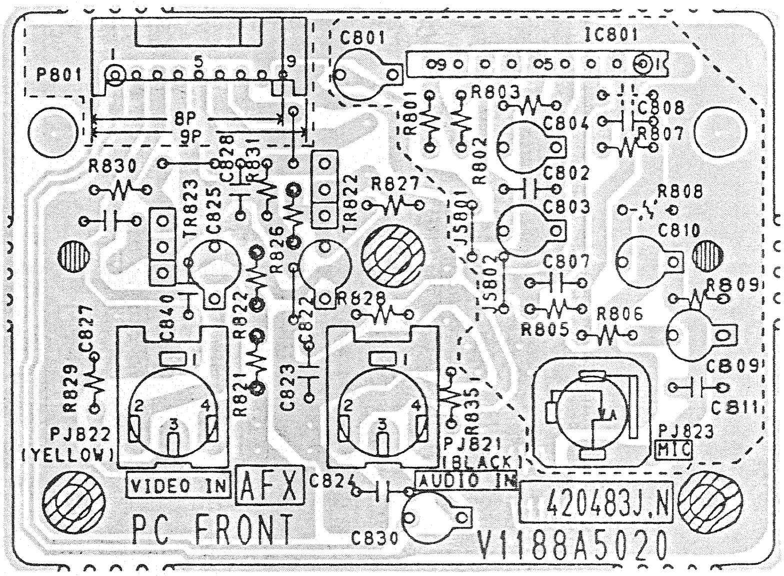
▨ B (POWER SUPPLY) LINE
▨ AUDIO IN SIGNAL LINE
▬ VIDEO IN SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED DURING E-E (STOP) MODE.

FRONT
SCHEMATIC DIAGRAM
NO.18-12 V118810M
A3

PJ821,822

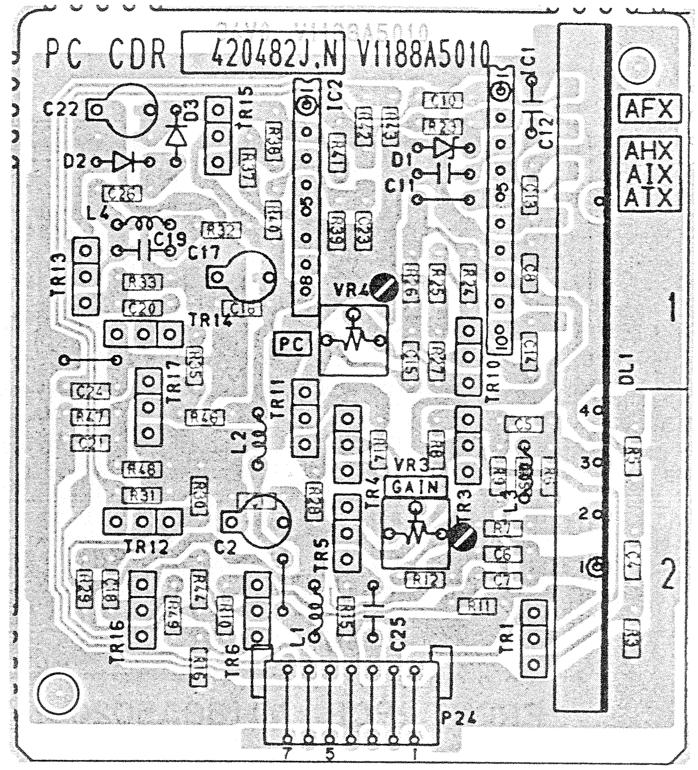




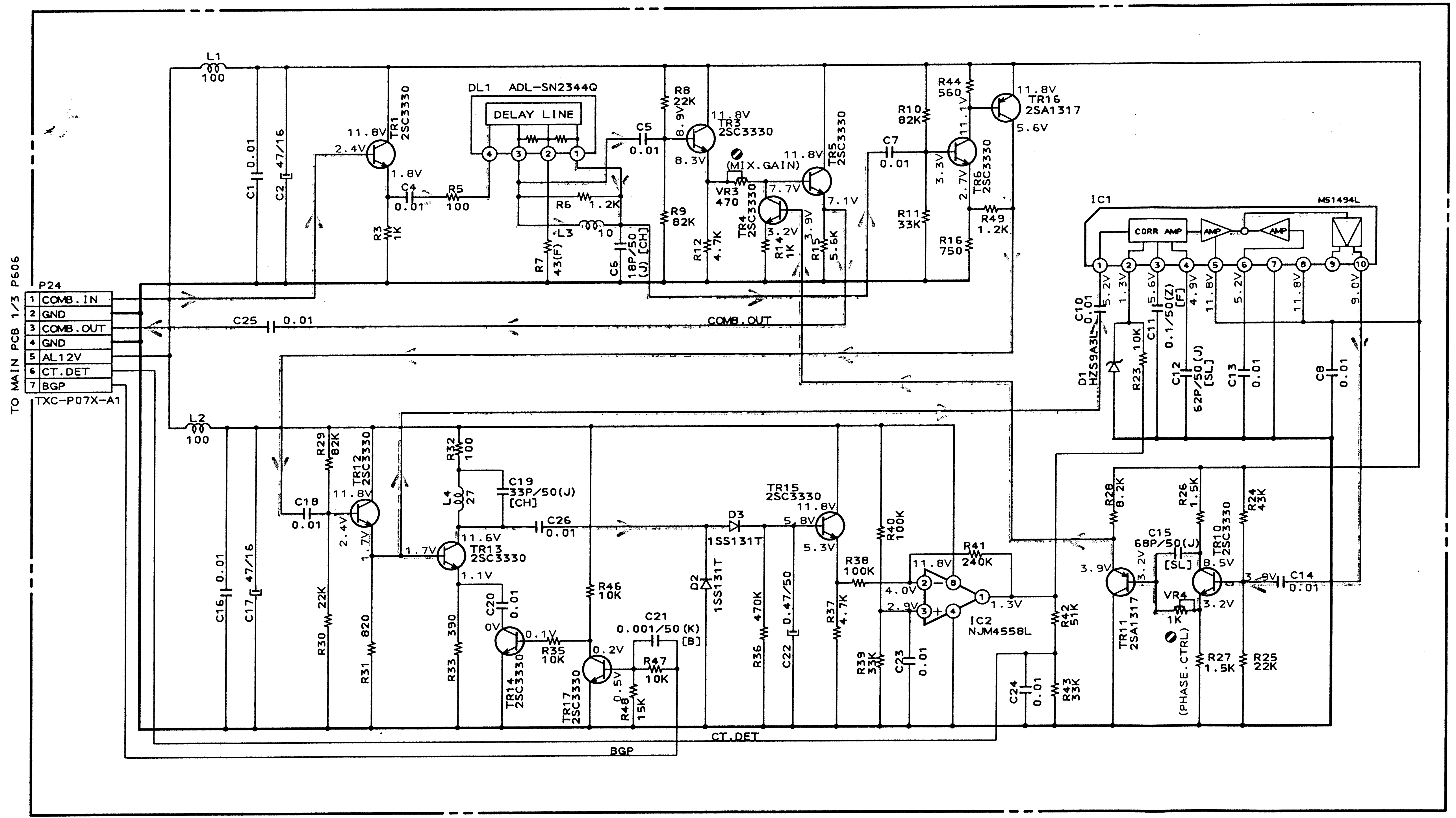
P801
1
5
9
8P
9P
C801
IC801
R801
R803
R802
C804
C808
R807
C802
R808
C803
C810
R830
C828
R831
TR823
C825
R826
TR822
R827
J5801
J5802
C807
R809
C840
R822
C822
R828
R805
R806
C827
R829
R821
C823
R835
C809
C811
PJ822
(YELLOW)
PJ821
(BLACK)
PJ823
MIC
VIDEO IN
AFX
C824
AUDIO IN
420483J.N
PC FRONT
C830
V1188A5020

FRONT PCB V1188A5020

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


PC CDR
420482J.N
V1188A5010
AFX
AHX
AIX
ATX
IC1
IC2
C12
C10
R23
D1
C11
C22
D3
TR15
R38
R37
D2
C26
L4
R32
C19
C17
TR13
R33
C20
C16
TR14
VR4
PC
R26
R25
R24
R34
C15
R27
TR10
C14
1
DL1
R35
TR17
TR11
C24
R47
R46
L2
C21
R48
TR4
R18
VR3
GAIN
C5
4
3
2
1
L3
R31
R30
R28
TR12
C2
TR3
R7
C6
C7
R12
R11
TR5
L1
C25
TR1
TR16
TR6
R16
R42
P24
7
5
1
2

CDR PCB V1188A5010


TO MAIN PCB 1/3 P606
P24
1 COMB. IN
2 GND
3 COMB. OUT
4 GND
5 AL12V
6 CT. DET
7 BGP
TXC-P07X-A1
L1 100
C1 0.01
C2 47/16
TR1 2SC3330
11.8V
2.4V
1.8V
C4 0.01
R5 100
R3 1K
DL1 ADL-SN2344Q
DELAY LINE
R6 1.2K
L3 10
R7 43(F)
C6 18P/50 (J) [CH]
C5 0.01
R8 22K
8.9V
TR3 2SC3330
11.8V
8.3V
R9 82K
R12 4.7K
(MIX. GAIN)
VR3 470
TR4 2SC3330
7.7V
3.2V
R14 1K
TR5 2SC3330
11.8V
3.9V
7.1V
R15 5.6K
C7 0.01
R10 82K
R11 33K
TR6 2SC3330
3.3V
2.7V
11.1V
R44 560
TR16 2SA1317
11.8V
5.6V
R49 1.2K
R16 750
C25 0.01
COMB. OUT
IC1
M51494L
CORR AMP
AMP
AMP
5.2V
1.3V
5.6V
4.9V
11.8V
5.2V
11.8V
9.0V
C10 0.01
D1 HZS9A3L
R23 10K
C11 0.1/50(Z) [F]
C12 62P/50(J) [SL]
C13 0.01
C8 0.01
L2 100
C16 0.01
C17 47/16
R29 82K
R30 22K
C18 0.01
TR12 2SC3330
11.8V
2.4V
1.7V
R31 820
R32 100
L4 27
C19 33P/50(J) [CH]
TR13 2SC3330
1.7V
11.6V
1.1V
R33 390
C26 0.01
C20 0.01
0V
TR14 2SC3330
0.1V
R35 10K
R46 10K
TR17 2SC3330
0.2V
0.5V
R48 15K
R47 10K
C21 0.001/50 (K) [B]
D3 1SS131T
D2 1SS131T
R36 470K
C22 0.47/50
TR15 2SC3330
11.8V
5.8V
5.3V
R37 4.7K
R38 100K
R40 100K
R41 240K
IC2 NJM4558L
11.8V
4.0V
2.9V
1.3V
R39 33K
C23 0.01
C24 0.01
R42 51K
R43 33K
R28 8.2K
TR11 2SA1317
3.9V
3.2V
C15 68P/50(J) [SL]
VR4 1K
(PHASE. CTRL)
R26 1.5K
TR10 2SC3330
8.5V
3.2V
R27 1.5K
R24 43K
R25 22K
C14 0.01
3.9V
CT. DET
BGP

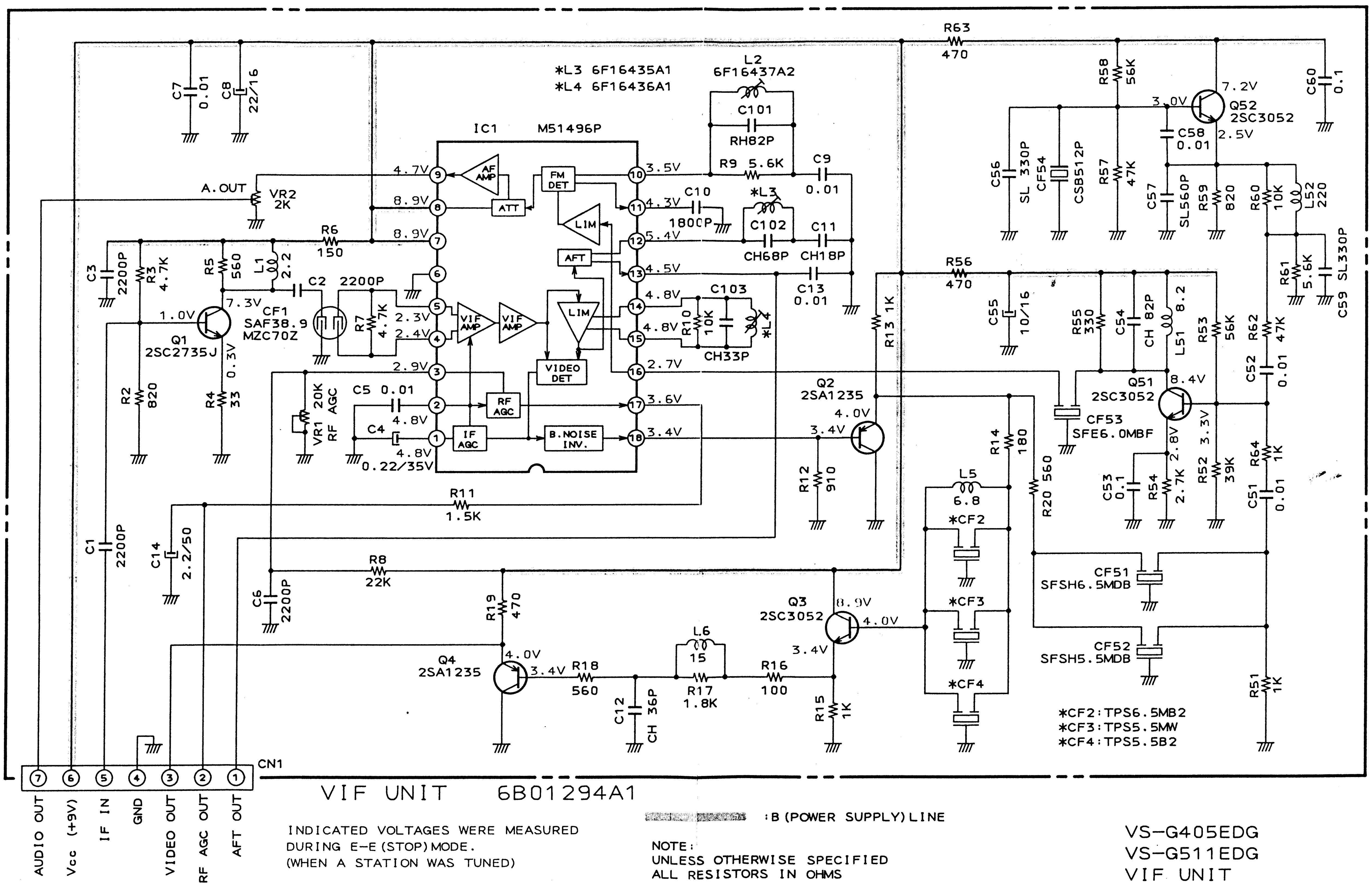
CDR PCB V1188A5010

B (POWER SUPPLY) LINE
PB CHROMA SIGNAL LINE
CROSSTALK OR NON-CORELATED SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF (P=PF) 16WV (N)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (J)

INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE USED: SECAM RECORDED TAPE)

CDR
SCHEMATIC DIAGRAM
NO.18-13 V118410M A3


R63
470
*L3 6F16435A1
*L4 6F16436A1
L2
6F16437A2
C7 0.01
C8 22/16
C101
RH82P
R58 56K
7.2V
3.0V
Q52
2SC3052
C60 0.1
C58 0.01
2.5V
IC1 M51496P
4.7V
AF AMP
FM DET
3.5V
R9 5.6K
C9 0.01
A.OUT
VR2 2K
8.9V
ATT
4.3V
C10
1800P
*L3
C102
C11
R6 150
8.9V
LIM
5.4V
CH68P
CH18P
AFT
4.5V
C56 SL 330P
CF54 CSB512P
R57 47K
C57 SL560P
R59 820
R60 10K
L52 220
C3 2200P
R3 4.7K
R5 560
L1 2.2
C2 2200P
R56 470
C13 0.01
C103
4.8V
4.8V
R10 10K
CH33P
*L4
R61 5.6K
C59 SL330P
7.3V
CF1 SAF38.9 MZC70Z
R7 4.7K
2.3V
2.4V
VIF AMP
VIF AMP
LIM
1.0V
Q1 2SC2735J
0.3V
R13 1K
C55 10/16
R55 330
C54 CH 82P
L51 8.2
R53 56K
R62 47K
2.9V
VIDEO DET
2.7V
C5 0.01
C4
4.8V
4.8V
0.22/35V
RF AGC
IF AGC
B.NOISE INV.
3.6V
3.4V
VR1 20K RF AGC
R2 820
R4 33
Q2 2SA1235
4.0V
3.4V
R12 910
Q51 2SC3052
8.4V
C52 0.01
CF53 SFE6.0MBF
2.8V
3.3V
R14 180
R20 560
R11 1.5K
L5 6.8
*CF2
C53 0.1
R54 2.7K
R52 39K
R64 1K
C51 0.01
C1 2200P
C14 2.2/50
R8 22K
CF51 SFSH6.5MDB
C6 2200P
R19 470
Q3 2SC3052
8.9V
4.0V
*CF3
CF52 SFSH5.5MDB
Q4 2SA1235
4.0V
3.4V
R18 560
L6 15
R17 1.8K
R16 100
3.4V
R15 1K
*CF4
R51 1K
C12 CH 36P
*CF2:TPS6.5MB2
*CF3:TPS5.5MW
*CF4:TPS5.5B2
CN1
7 6 5 4 3 2 1
AUDIO OUT
Vcc (+9V)
IF IN
GND
VIDEO OUT
RF AGC OUT
AFT OUT

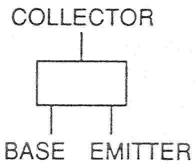
VIF UNIT 6B01294A1

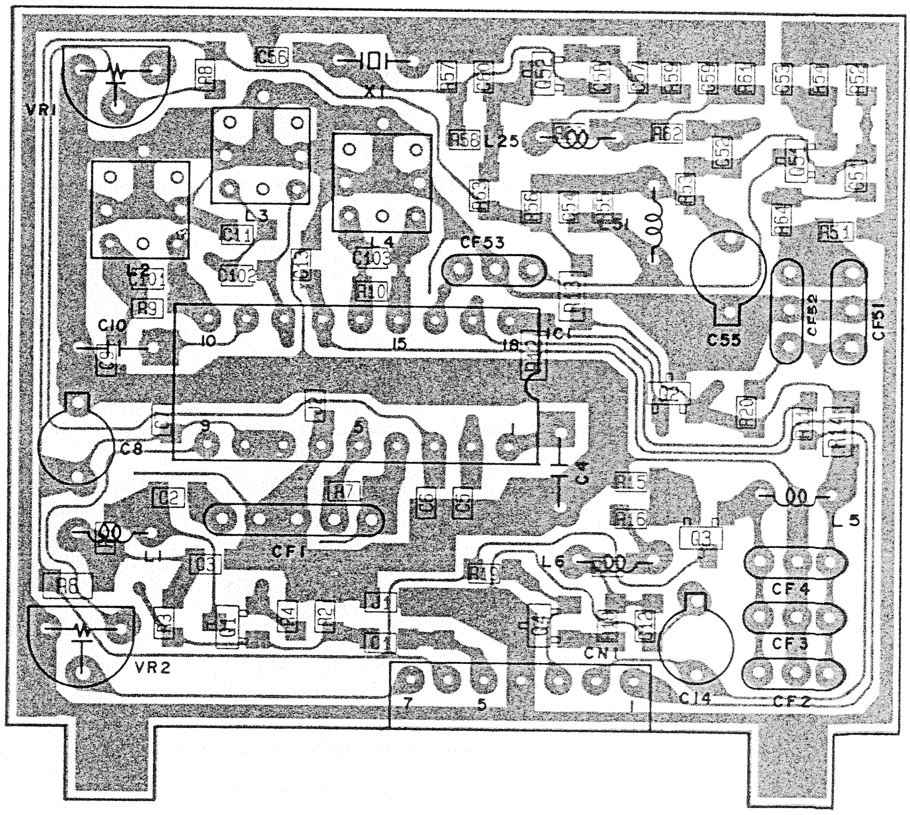
▨ :B (POWER SUPPLY) LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS TUNED)

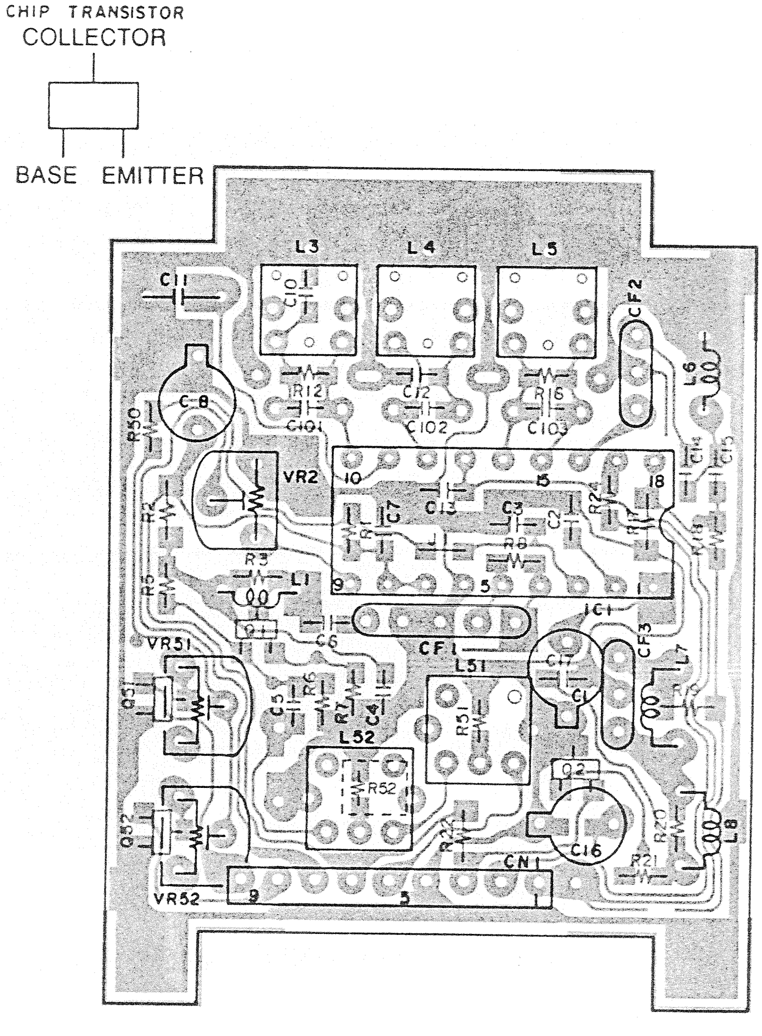
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTOR IN μH (K)

VS-G405EDG
VS-G511EDG
VIF UNIT
SCHEMATIC DIAGRAM
NO.18-14 V118811M
A3

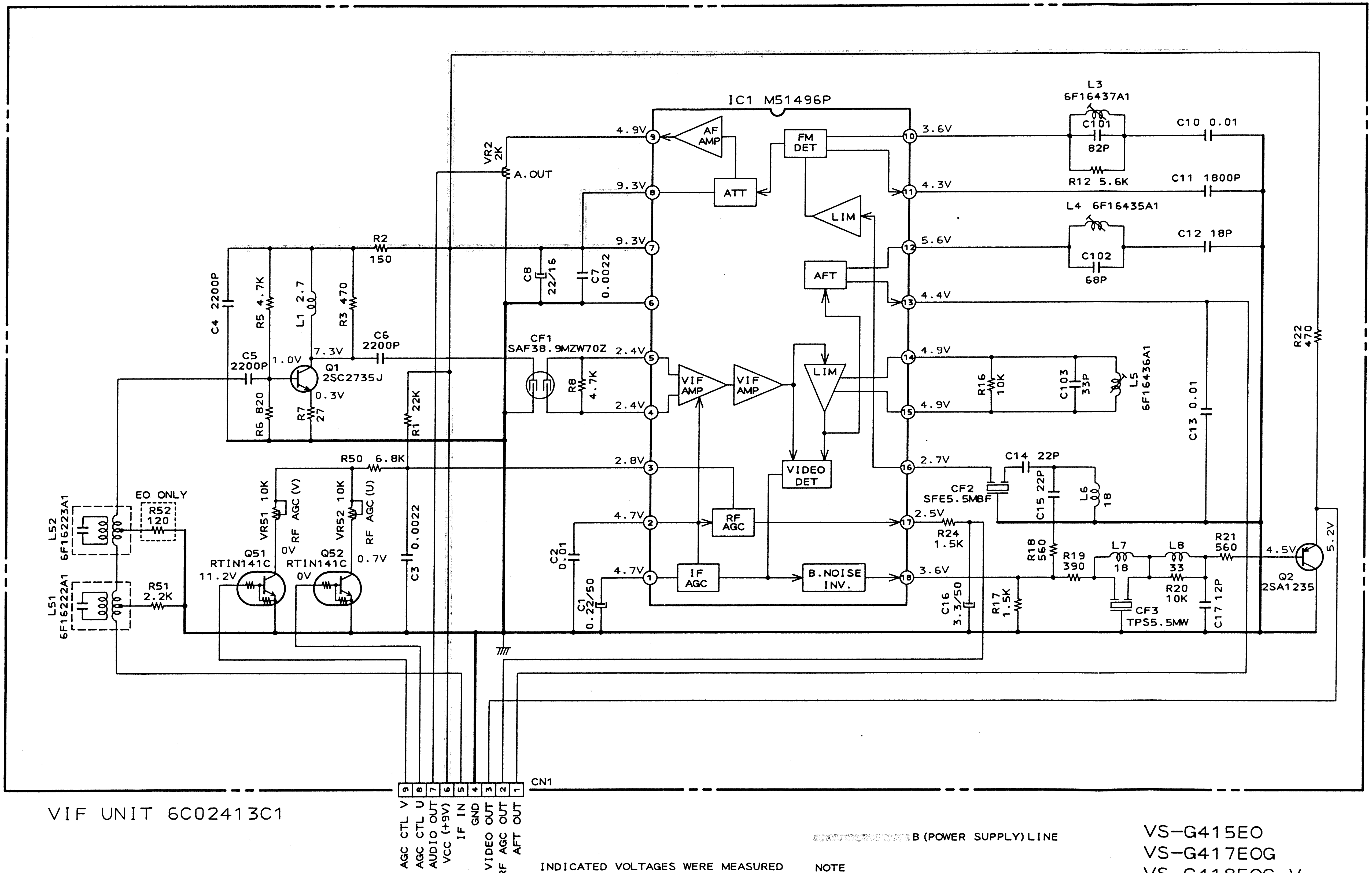

COLLECTOR
BASE
EMITTER


VR1
C56
X1
R8
L2
L3
L4
C11
C101
C102
C103
R9
R10
C10
R58
L25
R62
CF53
L51
C55
CF52
CF51
R51
IC1
10
15
18
9
5
1
C8
C4
R7
C6
C5
R15
R16
R20
Q3
L5
CF1
L1
Q3
R6
R3
R2
J1
C1
L6
CF4
CF3
CF2
CN1
C14
VR2
7
5
1

VIF UNIT 6B01294A1


CHIP TRANSISTOR
COLLECTOR
BASE
EMITTER
L3
L4
L5
C11
C10
CF2
L6
R12
C12
R16
C101
C102
C103
C8
R50
VR2
10
15
18
C14
C15
C7
C13
C3
C2
R24
R17
R18
R2
R3
L1
R8
R1
9
5
R5
C6
IC1
CF1
CF3
L7
VR51
Q51
L51
C17
C1
C5
R6
R7
C4
R19
R51
L52
R52
Q2
Q52
R22
C16
R20
L8
R21
CN1
VR52
3
1

VIF UNIT 6C02413C1


IC1 M51496P
AF AMP
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
4.9V
9.3V
9.3V
2.4V
2.4V
2.8V
4.7V
4.7V
3.6V
4.3V
5.6V
4.4V
4.9V
4.9V
2.7V
2.5V
3.6V
VR2 2K
A.OUT
R2 150
C8 22/16
C7 0.0022
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
C5 2200P
1.0V
7.3V
Q1 2SC2735J
0.3V
R6 820
R7 27
R1 22K
CF1 SAF38.9MZW70Z
R8 4.7K
R50 6.8K
VR51 10K RF AGC (V)
VR52 10K RF AGC (U)
0V
0.7V
C3 0.0022
Q51 RTIN141C
Q52 RTIN141C
11.2V
0V
EO ONLY
R52 120
L52 6F16223A1
L51 6F16222A1
R51 2.2K
C2 0.01
C1 0.22/50
L3 6F16437A1
C101 82P
R12 5.6K
C10 0.01
C11 1800P
L4 6F16435A1
C102 68P
C12 18P
R16 10K
C103 33P
L5 6F16436A1
C13 0.01
R22 470
C14 22P
CF2 SFE5.5MBF
C15 22P
L6 18
R24 1.5K
C16 3.3/50
R17 1.5K
R18 560
R19 390
L7 18
L8 33
R20 10K
CF3 TPS5.5MW
C17 12P
R21 560
4.5V
5.2V
Q2 2SA1235
CN1
9 AGC CTL V
8 AGC CTL U
7 AUDIO OUT
6 VCC (+9V)
5 IF IN
4 GND
3 VIDEO OUT
2 RF AGC OUT
1 AFT OUT

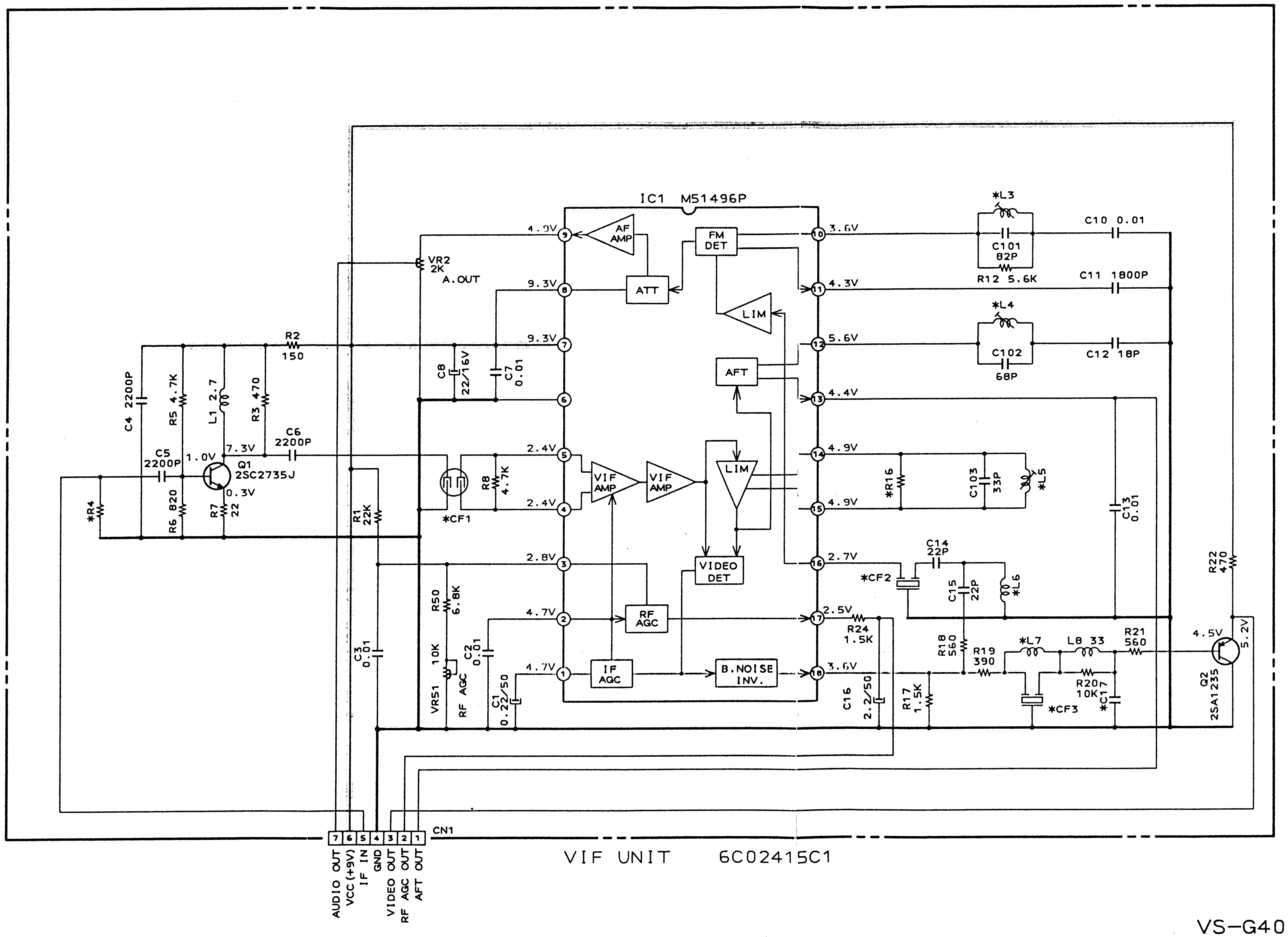
VIF UNIT 6C02413C1

▨ B (POWER SUPPLY) LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS TUNED)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH (K)

VS-G415EO
VS-G417EOG
VS-G418EOG-V
VIF UNIT
SCHEMATIC DIAGRAM
NO.18-15 V118812M
A3


IC1 M51496P
AF AMP
FM DET
ATT
LIM
AFT
VIF AMP
VIF AMP
LIM
VIDEO DET
RF AGC
IF AGC
B.NOISE INV.
4.9V
9.3V
9.3V
2.4V
2.4V
2.8V
4.7V
4.7V
3.6V
4.3V
5.6V
4.4V
4.9V
4.9V
2.7V
2.5V
3.6V
VR2 2K
A.OUT
R2 150
C4 2200P
R5 4.7K
L1 2.7
R3 470
C6 2200P
C5 2200P
1.0V
7.3V
0.3V
Q1 2SC2735J
*R4
R6 820
R7 22
R1 22K
C8 22/16V
C7 0.01
R8 4.7K
*CF1
R50 6.8K
C3 0.01
10K
VR51
RF AGC
C2 0.01
C1 0.22/50
*L3
C101 82P
R12 5.6K
C10 0.01
C11 1800P
*L4
C102 68P
C12 18P
*R16
C103 33P
*L5
C13 0.01
C14 22P
*CF2
C15 22P
*L6
R24 1.5K
C16 2.2/50
R17 1.5K
R18 560
R19 390
*L7
L8 33
R20 10K
*C17
*CF3
R21 560
R22 470
4.5V
5.2V
Q2 2SA1235
CN1
7 6 5 4 3 2 1
AUDIO OUT
VCC(+9V)
IF IN
GND
VIDEO OUT
RF AGC OUT
AFT OUT
VIF UNIT 6C02415C1

*	EM	EOH	EK
CF1	SAF38.9 MZW70Z	SAF38.9 MZW70Z	SAF39.5 MZ70Z
CF2	SFE 5.5MBF	←	SFE 6.0MBF
CF3	TPS 5.5MB2	TPS 5.5MW	TPS 6.0MB2
L 3	6F16437 A1	←	6F16437 A2
L 4	6F16435 A1	←	←
L 5	6F16436 A1	←	←
L 6	18μ	←	15μ
L 7	18μ	15μ	←
R 4	100	←	180
R16	10K	47K	10K
C17	CH12P	←	CH15P

*	EA	ES
CF1	SAF36.9 MZ70Z	SAF38.9 MW70Z
CF2	SFE 5.5MBF	SFE 6.0MBF
CF3	TPS 5.5MW	TPS 6.0MB2
L 3	6F16437 A1	6F16437 A2
L 4	6F16436 A2	6F16435 A1
L 5	6F16441 A1	6F16446 A1
L 6	18μ	15μ
L 7	18μ	15μ
R 4	150	100
R16	10K	10K
C17	CH12P	CH15P

VS-G405EA

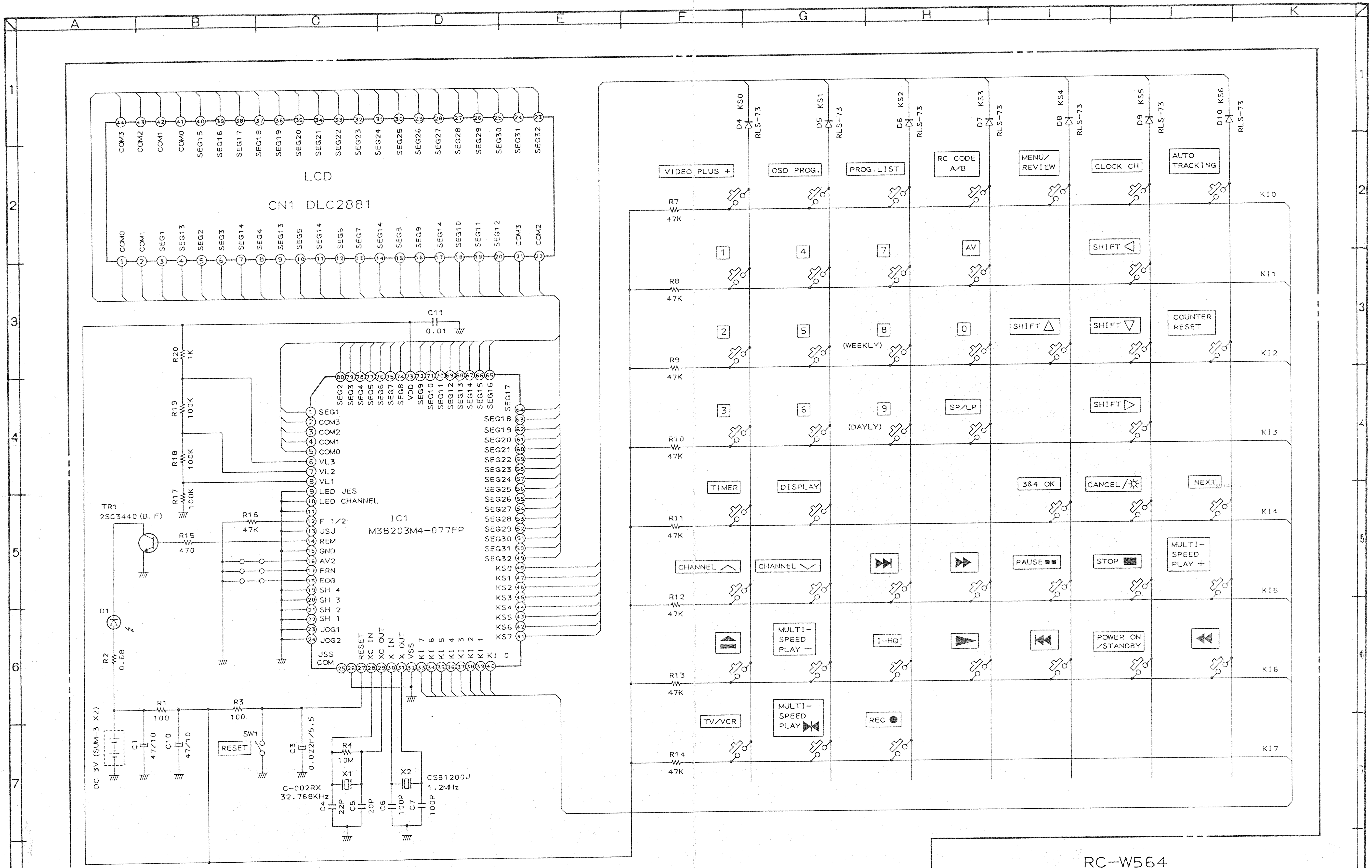
▨ B (POWER SUPPLY) LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS TUNED)

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL INDUCTORS IN μH (K)

VIF UNIT
SCHEMATIC DIAGRAM

NO.18-16 V118813M
A3



LCD
CN1 DLC2881
COM3 COM2 COM1 COM0 SEG15 SEG16 SEG17 SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32
COM0 COM1 SEG1 SEG13 SEG2 SEG3 SEG14 SEG4 SEG13 SEG5 SEG14 SEG6 SEG7 SEG14 SEG8 SEG9 SEG14 SEG10 SEG11 SEG12 COM3 COM2
C11
0.01
R20 1K
R19 100K
R18 100K
R17 100K
IC1
M38203M4-077FP
SEG1 COM3 COM2 COM1 COM0 VL3 VL2 VL1
LED JES
LED CHANNEL
F 1/2
JSJ
REM
GND
AV2
FRN
EOG
SH 4
SH 3
SH 2
SH 1
JOG1
JOG2
JSS COM
RESET XC IN XC OUT X IN X OUT VSS KI 7 KI 6 KI 5 KI 4 KI 3 KI 2 KI 1 KI 0
SEG2 SEG3 SEG4 SEG5 SEG6 SEG7 SEG8 VDD SEG9 SEG10 SEG11 SEG12 SEG13 SEG14 SEG15 SEG16 SEG17
SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32
KS0 KS1 KS2 KS3 KS4 KS5 KS6 KS7
TR1
2SC3440 (B, F)
R16 47K
R15 470
D1
R2 0.68
DC 3V (SUM-3 X2)
C1 47/10
C10 47/10
R1 100
R3 100
SW1
RESET
C3 0.022F/5.5
R4 10M
X1
C-002RX
32.768KHz
C4 22P
C5 20P
X2
CSB1200J
1.2MHz
C6 100P
C7 100P
D4 KS0 RLS-73
D5 KS1 RLS-73
D6 KS2 RLS-73
D7 KS3 RLS-73
D8 KS4 RLS-73
D9 KS5 RLS-73
D10 KS6 RLS-73
VIDEO PLUS +
OSD PROG.
PROG.LIST
RC CODE A/B
MENU/ REVIEW
CLOCK CH
AUTO TRACKING
KI0
R7 47K
1
4
7
AV
SHIFT ◁
KI1
R8 47K
2
5
8
(WEEKLY)
0
SHIFT △
SHIFT ▽
COUNTER RESET
KI2
R9 47K
3
6
9
(DAYLY)
SP/LP
SHIFT ▷
KI3
R10 47K
TIMER
DISPLAY
3&4 OK
CANCEL/☼
NEXT
KI4
R11 47K
CHANNEL ⌃
CHANNEL ⌄
⏭
⏩
PAUSE ▮▮
STOP
MULTI-SPEED PLAY +
KI5
R12 47K
⏏
MULTI-SPEED PLAY −
I-HQ
▶
⏮
POWER ON /STANDBY
⏪
KI6
R13 47K
TV/VCR
MULTI-SPEED PLAY ⧓
REC ●
KI7
R14 47K
A B C D E F G H I J K
1 2 3 4 5 6 7 8

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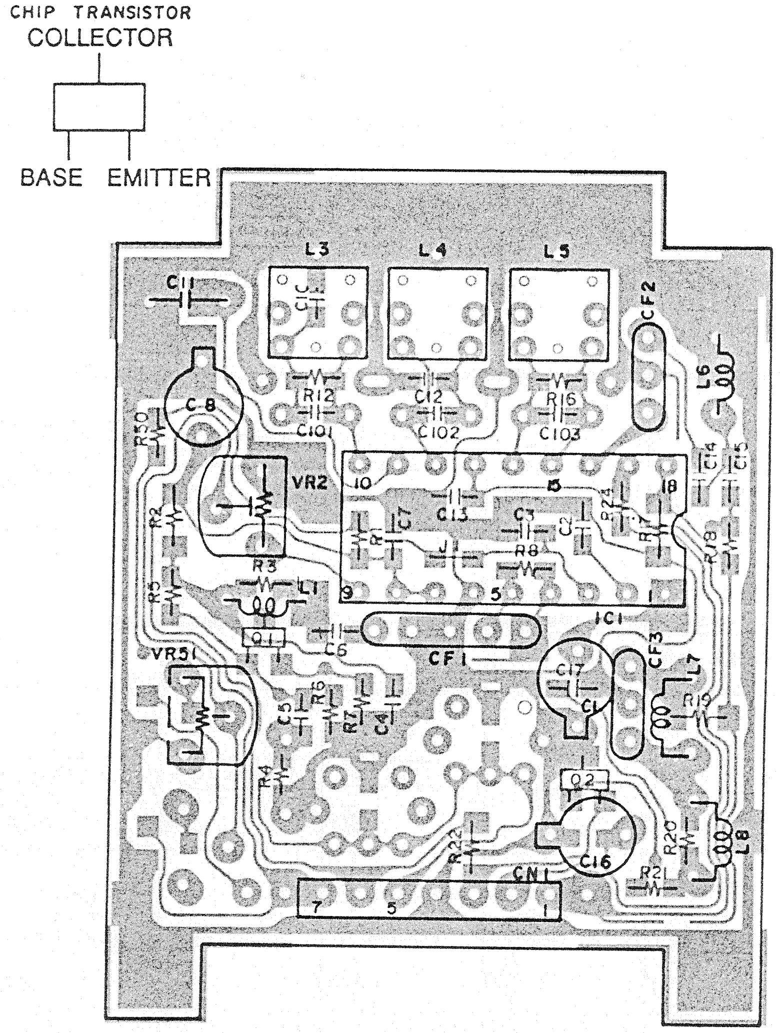
TO AVOID REPLACING INDIVIDUAL PARTS, REPLACE
THE ENTIRE UNIT ONLY.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P-PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

RC-W564
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.18-17 V118814M
A2


CHIP TRANSISTOR
COLLECTOR
BASE
EMITTER
L3
L4
L5
CF2
L6
C11
C10
C8
R50
R12
C101
C12
C102
R16
C103
C14
C15
VR2
10
15
18
R2
C7
C13
C3
C2
R17
R18
R3
L1
R8
R5
9
5
IC1
Q1
C6
CF1
CF3
L7
VR51
C17
C1
R19
C5
R6
R7
C4
R4
Q2
R20
L8
R22
CN1
C16
R21
7
5
1

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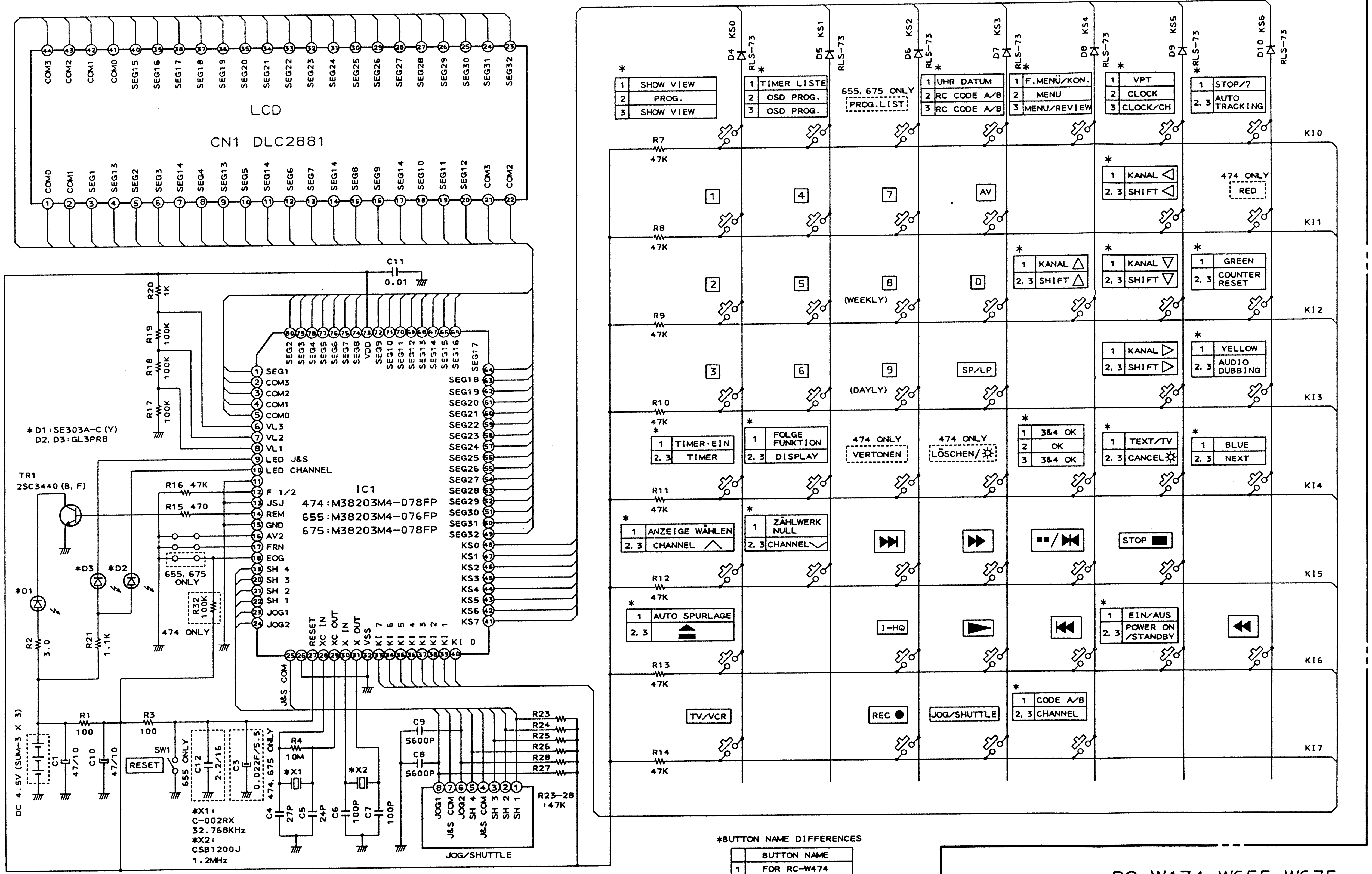
LCD
CN1 DLC2881
COM3 COM2 COM1 COM0 SEG15 SEG16 SEG17 SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32
COM0 COM1 SEG1 SEG13 SEG2 SEG3 SEG14 SEG4 SEG13 SEG5 SEG14 SEG6 SEG7 SEG14 SEG8 SEG9 SEG14 SEG10 SEG11 SEG12 COM3 COM2
C11 0.01
R20 1K
R19 100K
R18 100K
R17 100K
*D1:SE303A-C (Y)
D2, D3:GL3PR8
TR1
2SC3440 (B, F)
*D3
*D2
*D1
R16 47K
R15 470
655, 675 ONLY
R32 100K
474 ONLY
R2 3.0
R21 1.1K
IC1
474:M38203M4-078FP
655:M38203M4-076FP
675:M38203M4-078FP
SEG1 COM3 COM2 COM1 COM0 VL3 VL2 VL1 LED J&S LED CHANNEL F 1/2 JSJ REM GND AV2 FRN EOG SH 4 SH 3 SH 2 SH 1 JOG1 JOG2
SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32 KS0 KS1 KS2 KS3 KS4 KS5 KS6 KS7
RESET XC IN XC OUT X IN X OUT VSS KI 7 KI 6 KI 5 KI 4 KI 3 KI 2 KI 1 KI 0
J&S COM
R1 100
R3 100
SW1
RESET
C1 47/10
C10 47/10
DC 4.5V (SUM-3 X 3)
655 ONLY C12 2.2/16
C3 0.022F/5.5 474, 675 ONLY
R4 10M
*X1
*X2
C4 27P
C5 24P
C6 100P
C7 100P
*X1: C-002RX 32.768KHz
*X2: CSB1200J 1.2MHz
C9 5600P
C8 5600P
R23 R24 R25 R26 R28 R27
R23~28 :47K
JOG1 J&S COM JOG2 SH 4 J&S COM SH 3 SH 2 SH 1
JOG/SHUTTLE
D4 KS0 RLS-73
D5 KS1 RLS-73
D6 KS2 RLS-73
D7 KS3 RLS-73
D8 KS4 RLS-73
D9 KS5 RLS-73
D10 KS6 RLS-73
R7 47K
R8 47K
R9 47K
R10 47K
R11 47K
R12 47K
R13 47K
R14 47K
KI0 KI1 KI2 KI3 KI4 KI5 KI6 KI7
1 SHOW VIEW
2 PROG.
3 SHOW VIEW
1 TIMER LISTE
2 OSD PROG.
3 OSD PROG.
655, 675 ONLY
PROG.LIST
1 UHR DATUM
2 RC CODE A/B
3 RC CODE A/B
1 F.MENÜ/KON.
2 MENU
3 MENU/REVIEW
1 VPT
2 CLOCK
3 CLOCK/CH
1 STOP/?
2, 3 AUTO TRACKING
1 2 3 4 5 6 7 8 9 0
AV
(WEEKLY)
(DAYLY)
SP/LP
1 KANAL ◁
2, 3 SHIFT ◁
474 ONLY
RED
1 KANAL △
2, 3 SHIFT △
1 KANAL ▽
2, 3 SHIFT ▽
1 GREEN
2, 3 COUNTER RESET
1 KANAL ▷
2, 3 SHIFT ▷
1 YELLOW
2, 3 AUDIO DUBBING
1 TIMER·EIN
2, 3 TIMER
1 FOLGE FUNKTION
2, 3 DISPLAY
474 ONLY
VERTONEN
474 ONLY
LÖSCHEN/☼
1 3&4 OK
2 OK
3 3&4 OK
1 TEXT/TV
2, 3 CANCEL☼
1 BLUE
2, 3 NEXT
1 ANZEIGE WÄHLEN
2, 3 CHANNEL △
1 ZÄHLWERK NULL
2, 3 CHANNEL▽
STOP ■
1 AUTO SPURLAGE
2, 3
I-HQ
1 EIN/AUS
2, 3 POWER ON /STANDBY
TV/VCR
REC ●
JOG/SHUTTLE
1 CODE A/B
2, 3 CHANNEL

*BUTTON NAME DIFFERENCES

	BUTTON NAME
1	FOR RC-W474
2	FOR RC-W655
3	FOR RC-W675

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ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

RC-W474, W655, W675
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM

NO.18-18 V118815M A2

AN3558FBS (Y/C SIGNAL PROCESSOR)

PIN No.	PORT NAME	I/O	FUNCTION
1	MOD IN	I	REC FM modulator input pin.
2	W/C	–	For white clip level adjustment.
3	MDE OUT	O	Main de-emphasis output pin.
4	MDE PEAK	–	For main de-emphasis peaking control.
5	Vcc (Y)	–	Power supply (for modulator & RF system).
6	REC FM OUT	O	REC FM modulator output pin.
7	DEM GAIN	–	De-modulator gain control pin.
8	PB FM IN	I	PB FM Y signal input pin.
9	ENV DET	–	PB FM Y signal envelope level detect pin.
10	DOP OUT	O	Dropout pulse output pin.
11	EE/PB/TRICK	–	EE/PB/TRICK select pin (H : EE, M : PB, L : PB TRICK).
12	SP/LP/EP	–	SP/LP/EP select pin (H : EP, M : LP, L : SP).
13	C-KILL DET	–	Colour killer detect pin (L : killer ON).
14	NC CTL	–	Noise canceller (NLC/NC) control pin.
15	SLD	–	Side lock detect pin.
16	REC/PB	–	REC/PB select pin (H : PB-ID off, M : PB-ID on, L : REC).
17	BGP OUT	O	Burst gate pulse output pin.
18	ROT	I	Chroma rotary pulse input pin.
19	MODE SEL	–	LNC mode select pin (H : edit, M : NOR2, L : NOR1).
20	MUTE DET	–	Mute detect pin (L : mute, H : non mute).
21	RAD	–	REC APC detect pin.
22	GND(C)	–	Ground (for VCO).
23	AFC/APC	–	REC AFC/PB APC detect pin.
24	fVCO	–	VCO frequency adjustment pin.
25	fVCO(PAL)	–	fVCO select pin (L : PAL ON).
26	X'TAL(PAL)	–	X'tal connect pin for PAL.
27	X'TAL(N/P)	–	X'tal connect pin for NTSC or PAL. (commom pin)
28	X'TAL(NTSC)	–	X'tal connect pin for NTSC.
29	Vcc(C)	–	Power supply for VCO, VXO system.
30	Ref FH DET C	–	Chroma filter auto adjust detect pin.
31	2fsc	O	2fsc output pin.
32	GND(C)	–	Ground for VXO.
33	CACC DET	–	Chroma ACC detect pin.
34	REC C OUT	O	REC chroma signal output pin.
35	FACC DET	–	Field ACC detect pin for CH-2. (OFF when trick mode)
36	ACC DET	–	ACC detect pin.
37	FACC DET	–	Field ACC detect pin for CH-1. (OFF when trick mode)
38	ACC BAL	–	Capacitor connecting pin for ACC balance.
39	3.58/4.43	–	3.58/4.43 select pin (H : 3.58, L : 4.43).
40	VCC(C)	–	Power supply (for main chroma).
41	PB RF C IN	I	PB low chroma signal input pin.
42	CNR TEST	I	CNR monitor and on/off pin (ON : 3.4 V, OFF : 3.8 V).
43	GND(C)	–	Ground for chroma system.
44	TEST2	–	Test pin 2.
45	BMC	–	Capacitor connecting pin for BM balance.
46	TEST1	–	Test pin 1.
47	CACC-C	–	Capacitor connecting pin for chroma ACC balance.
48	COMB DRV	O	Driving output for comb filter.
49	C IN TH	I	Chroma signal input pin (direct in).
50	C IN COMB	I	Chroma signal input pin (through the COMB filter).
51	CNR DL	I	Input from the CNR delay line.
52	MODE SEL	–	Colour mode select pin (H : MESECAM, M : PAL, L : NTSC).
53	PB C OUT	O	PB chroma signal output pin.
54	Y LPF DET	–	Y LPF fsc detect pin.
55	Y/C MIX	I	PB chroma signal input for Y/C mix.
56	VCC(Y)	–	Power supply for Y signal.
57	V.OUT	O	Composite video signal output pin.
58	AVP	I	Quasi V-sync pulse input pin (H : sync level, M : gray level, L : through).
59	SCL DET	–	Sub clamp detect pin.
60	V.IN	I	Video signal input pin.
61	AGC DET	–	AGC level detect pin.
62	SECAM TH	O	SECAM through output pin.
63	EE ADJ	–	EE video level adjustment pin.
64	HSS OUT	O	H sync separator output pin.
65	SYNC DET	–	Sync separator detect pin.
66	SECAM CLP	I	SECAM clamp input pin.
67	Y LPF OUT	O	Y-LPF output pin.
68	CLP 1 IN	I	Clamp 1 input pin.
69	CLP 2 IN	I	Clamp 2 input pin.
70	CCD IN	O	Output for CCD.
71	YNR DEF	O	YNR diffrential component output pin.
72	CORR DET	I	Correlation detect input pin.
73	GND(Y)	–	Ground for Y signal.
74	CCD AGC DET	–	CCD AGC detect pin.
75	NC LPF	–	LPF pin for Noise Canceller.
76	PICT CTL	–	Picture control pin (L:sharp).
77	NLE/MDE	O	Non linear emphasis / main de-emphasis output pin.
78	CLP 3 IN	I	Clamp 3 input pin.
79	ME FBK	I	Main emphasis feedback input pin.
80	ME OUT	O	Main emphasised signal output pin.

CF72306 (TELETEXT DATA SLICER)

PIN No.	PORT NAME	I/O	FUNCTION
1	TSIG	I	Video sync input 1
2	SSIG	I	Video sync input 2
3	CSIG	I	Video data input
4	AGND1	–	Analogue ground
5	OSC1	I	13.875 MHz oscillator
6	OSC2	I	13.875 MHz oscillator
7	AVCC	–	Analogue Vcc
8	CREF	I	Video data reference input
9	AGND2	–	Analogue ground
10	BIAS	I	Internal reference
11	TSTAPLB	I	Test/Application
12	TCLK	O	Teletext clock
13	TDATA	O	Teletext data
14	DGND2	–	Digital ground
15	OSCOUT	O	Oscillator output
16	DVCC	–	Digital Vcc
17	WIND	I	Timing signal
18	DGND1	–	Digital ground
19	SYNC	O	Separated sync output
20	SCANOUT	O	Test scan output

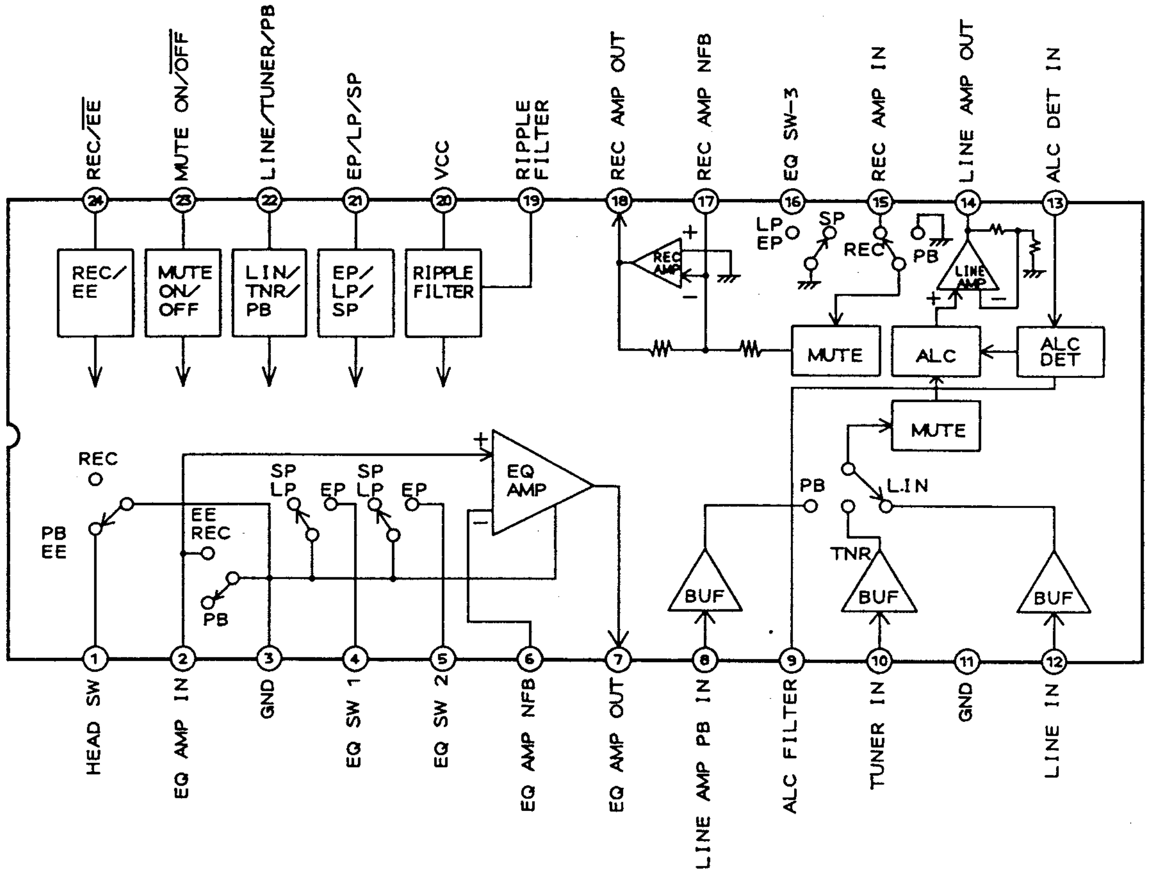
CF72307 (TELETEXT DECODER)

PIN No.	PORT NAME	I/O	FUNCTION
1	FIELD	O	Programmable output polarity of a 25 Hz output signal synchronized either with CSYNC or SLVHVSYNC input field sync pulses to produce a non-interlaced display.
2	DCSYNC	O	Digital composite sync output.
3	CSYNCIN	I	Active low composite sync.
4	TACW	I	Teletext aquisition window.
5	TUM	I	Test pin. (Must be grounded in normal application.)
6	OSCOUT	O	13.875 MHz crystal oscillator output.
7	OSCIN	I	13.875 MHz crystal oscillator input. (OSCIN must be grounded if the 13.875 MHz clock of the dataslicer is connected to CLKIN.)
8	DVCC1	I	Power supply for digital logic. (5 V ± 5 %)
9	CLKIN	I	13.875 MHz system clock input for digital logic.
10	DGND2	–	Ground terminal for digital logic.
11	TDATA	I	Teletext data from dataslicer.
12	TCLOCK	I	Teletext clock from dataslicer.
13	DGND1	–	Ground terminal for digital logic.
14	AVCC1	I	Power supply for analogue logic. (5 V ± 5 %)
15	BLANK	O	Picture blanking signal (active high).
16	BLUE	O	Blue output (active high).
17	AGND1	–	Ground terminal for analogue logic.
18	GREEN	O	Green output (active high).
19	AGND2	–	Ground terminal for analogue logic.
20	RED	O	Red output (active high).
21	AGND3	–	Ground terminal for analogue logic.
22	RGBSET	I/O	A current, determind by a resistor defines the output high level on the RGB pins.
23	REF	I/O	Reference voltage output for the RGB output drivers.
24	AVCC2	I	Power supply for analogue logic. (5 V ± 5 %)
25	VIDEOIN	I	Composite video signal input.
26	ACSYNC	O	Analogue output of sync switch.
27	TEST	I	Test pin. (Must be grounded in normal application.)
28	BIAS	I	Bias definition pin. (BIAS should be grounded if the on chip oscillator is not used.)
29	$\overline{\mathrm{RESET}}$	I	Power on reset signal input (active low).
30	TRC	I	Test pin. (Must be grounded in normal application.)
31	TGST		
32	TGMT		
33	SLVHSYNC	I	Programmable active low or high H-sync input. (In slave sync mode, it locks the horizontal display timing to this signal.)
34	SLVHVSYNC	I	Programmable active low or high V-sync input. (In slave sync mode, it locks the vertical display timing to this signal.)
35	PWRDWN	I	Power down the IC in test mode.(Should be grounded in normal application.)
36	SDA	I/O	I^{2}C-bus serial data.
37	SCL	I/O	I^{2}C-bus serial data clock.
38	C1	I	Test pin. (Must be connected to +5 V in normal application.)
39	CO	I	
50	A0	O	DRAM row and column address.
46	A1		
43	A2		
41	A3		
40	A4		
42	A5		
45	A6		
48	A7		
51	A8		
54	A9		
44	DVCC2	I	Power supply for digital logic. (5 V ± 5 %)
47	DGND3	–	Ground terminal for digital logic.
49	DGND4	–	
52	VDD32	O	Output terminal of the 3.2 V power supply.
53	DVCC3	I	Power supply for digital logic. (5 V ± 5 %)
55	$\overline{\mathrm{G}}$	O	DRAM output (active low).
56	$\overline{\mathrm{RAS0}}$	O	DRAM row address strobe output.
57	$\overline{\mathrm{CAS0}}$	O	DRAM column address strobe output.
58	$\overline{\mathrm{W}}$	O	DRAM write command (active low).
62	D0	I/O	DRAM data.
60	D1		
59	D2		
61	D3		
63	$\overline{\mathrm{RAS1}}$	O	DRAM row address strobe for memory bank zero.
64	$\overline{\mathrm{CAS1}}$	O	DRAM column address strobe for memory bank one.

CXA1645M (RGB ENCODER)

PIN No.	PORT NAME	I/O	FUNCTION
1	GND1	–	Ground (except RGB output, composite video output, Y/C output circuit).
2	R IN	I	Analog RGB signal input pin.
3	G IN	I	
4	B IN	I	
5	N.C	–	
6	SC IN	I	Sub carrier input pin.
7	NP IN	I	NTSC, PAL mode select pin. (H : NTSC, L : PAL)
8	BF OUT	O	Burst flag output for monitoring.
9	YCLPC	–	Time constant setting pin for Y signal clamp.
10	SYNC IN	I	Composite sync signal input pin.
11	N.C		
12	VCC1	–	+5 V power supply (except RGB output, composite video output, Y/C output circuit).
13	IREF	–	Pin for fixing internal reference current.
14	VREF	–	Pin for internal reference voltage.
15	C OUT	O	Chroma signal output pin.
16	Y OUT	O	Y signal output pin.
17	YTRAP	–	Pin for reducing cross colour by the sub carrier frequency component included in Y signal
18	FO	–	Internal filter fo adjustment pin.
19	VCC2	–	+5 V power supply (for RGB output, composite video output, Y/C output circuit).
20	CVOUT	O	Composite video signal output.
21	B OUT	O	Analog RGB signal output pin.
22	G OUT	O	
23	R OUT	O	
24	GND2	–	Ground (for RGB output,composite video output, Y/C output circuit).

LA7285 (AUDIO SIGNAL REC/PB AMP)


REC/$\overline{EE}$
MUTE ON/$\overline{OFF}$
LINE/TUNER/PB
EP/LP/SP
VCC
RIPPLE FILTER
REC AMP OUT
REC AMP NFB
EQ SW-3
REC AMP IN
LINE AMP OUT
ALC DET IN
24
23
22
21
20
19
18
17
16
15
14
13
REC/EE
MUTE ON/OFF
LIN/TNR/PB
EP/LP/SP
RIPPLE FILTER
REC AMP
LP
EP
SP
REC
PB
LINE AMP
MUTE
ALC
ALC DET
MUTE
REC
PB
EE
EE
REC
PB
SP
LP
EP
SP
LP
EP
EQ AMP
PB
L.IN
TNR
BUF
BUF
BUF
1
2
3
4
5
6
7
8
9
10
11
12
HEAD SW
EQ AMP IN
GND
EQ SW 1
EQ SW 2
EQ AMP NFB
EQ AMP OUT
LINE AMP PB IN
ALC FILTER
TUNER IN
GND
LINE IN

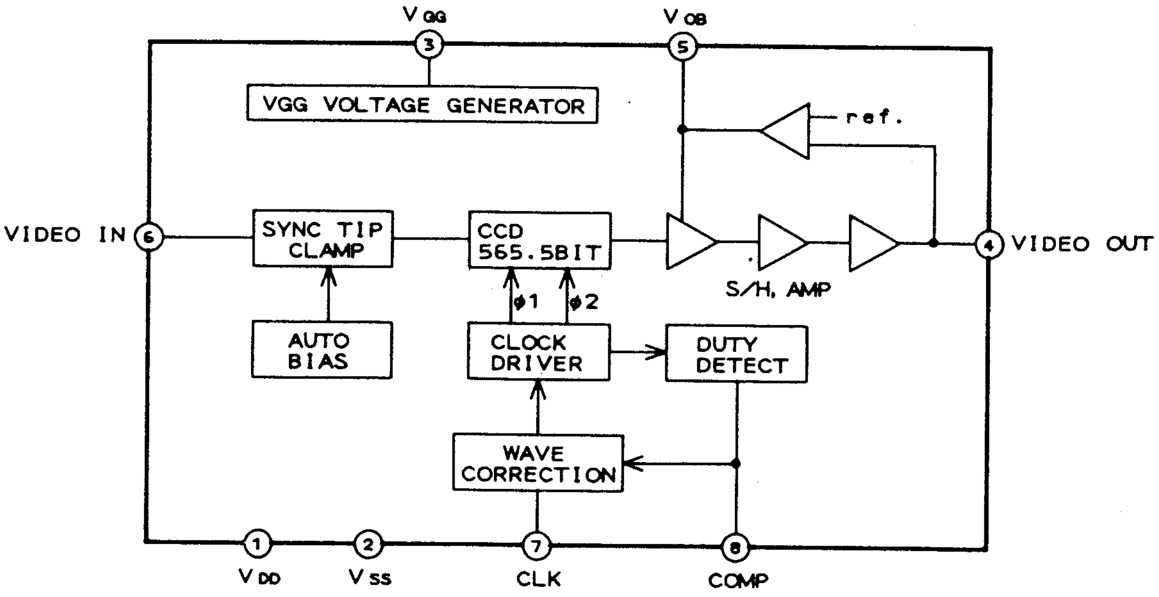
SWITCH FUNCTION

	DC LEVEL		
	0 ~ 1.0V	1.8 ~ 2.6V	3.6V
㉑PIN	SP	LP	EP
㉒PIN	PB	TUNER	LINE

LC74760 (CHARACTER GENERATOR)

PIN No	PORT NAME	I/O	FUNCTION
1	Vss	—	Connect the GND
2	XTAL in1	I	14.318 MHz crystal oscillator input
3	XTAL out1	O	14.318 MHz crystal oscillator output
4	H SYNC	O	AFC H sync output
5	XTAL in2	I	17.744 MHz crystal oscillator input
6	XTAL out2	O	17.744 MHz crystal oscillator output
7	V SYNC	O	V. SYNC output
8	$\overline{\text{CS}}$	I	Enable input pin of serial data input
9	SIN	I	Serial data input
10	SCLK	I	Clock input pin for serial data input
11	SECAM	I	SECAM mode select pin (H : SECAM MODE)
12	$\overline{\text{525}}$/625	I	Select pin, 525 or 625 of scanning line
13	$\overline{\text{NTSC}}$/PAL	I	NTSC/PAL SELECT PIN (L : NTSC)
14	$\overline{\text{3.58}}$/4.43	I	3.58MHz or 4.43MHz select input
15	$\overline{\text{RST}}$	I	System reset input
16	CVOUT	O	Composite video signal output
17	VDD2	—	Power supply (+5 V)
18	CVIN	I	Composite video signal input
19	CVCR	I	Chroma signal input for SECAM mode
20	SYNC IN	I	Video signal input of internal sync separator circuit
21	SEPC	—	Adjustment pin of internal sync separator circuit
22	Vss	—	Connect the GND
23	PD OUT	O	AFC control voltage output
24	AM PIN	I	Filter connect pin for AFC circuit
25	AM POUT	O	Filter connect pin for AFC circuit
26	FC	I	AFC control voltage input
27, 28	VCO IN (out)	I/O	Coil and capacitor connecting pin of LC oscillator for VCO.
29	SYNC DET	O	Exclusive NOR logic output of H SYNC AND C SYNC
30	VDD1	—	Digital power supply (+5 V)

LC8992 (CCD 1H DELAY LINE)


V GG
V OB
③
⑤
VGG VOLTAGE GENERATOR
ref.
VIDEO IN
⑥
SYNC TIP CLAMP
CCD 565.5BIT
④
VIDEO OUT
S/H. AMP
φ1
φ2
AUTO BIAS
CLOCK DRIVER
DUTY DETECT
WAVE CORRECTION
①
②
⑦
⑧
V DD
V SS
CLK
COMP

M37770M4H (SERVO/SYSCON MI-COM)

PIN NO	PORT NAME	I/O	FUNCTION
1, 35, 84	VCC	–	+5 V power supply.
4	TRP	I	Take up reel pulse input.
5	SRP	I	Supply reel pulse input.
6	SEC.MES	O	SECAM & MESECAM select output.
7	$\overline{\text{NTSC}}$	O	NTSC mode select output.
8	C.SYNC	I	Cmposite sync input.
9	$\overline{\text{SP}}$	O	Tape speed judge output.
3, 10, 74 103	VSS	–	Ground.
11	$\overline{\text{EE}}$	O	EE control pin.
12	VP	O	Quasi V pulse signal output.
14	$\overline{\text{REC.S}}$	O	REC start control output (except audio).
15	V.SWP	O	Video head switching pulse.
18	$\overline{\text{A.OSC}}$	O	Audio bias start control.
19	A.REC	O	Audio REC start control.
20	A.EE	O	Audio EE control pin.
23	$\overline{\text{VJ}}$	O	Video signal existence judge output.
25	DEC CTL	I	Decoder ON/OFF swithing.
29	REC SAF	I	REC safety sw input.
30	S.PACK	I	S-VHS tape detect switch input.
31~ 34	RSW1~ 4	I	Input from the rotary (mecha. position detect) switch 1~ 4.
36	SLOW PB	O	PB slow mode control.
37	$\overline{\text{PB}}$	O	PB mode control pin.
38	TRQUP	O	Loading motor torque control.
39	LM F	O	Loading motor direction control (forward).
40	LM R	O	Loading motor direction control (reverse).
41	COMB. OFF	O	Comb filter ON/OFF control.
44	NUB	–	Ground.
45	NUA	–	Ground.
46	$\overline{\text{RESET}}$	I	Reset input.
47	X IN	I	X'tal osc input (f = 16 MHz).
48	X OUT	O	X'tal osc output (f = 16 MHz).
49	CLK SEL	I	Clock select input.
51	XC IN	–	Ground.
53	INT/$\overline{\text{EXT}}$	O	Input select control output.
55	$\overline{\text{TV}}$/VCR	O	TV/VIDEO select control output.
56	I^2 C SDA	I/O	EEP ROM serial data in/out.
57	I^2 C SCL	O	EEP ROM serial clock output.
58	A.MUTE	O	Audio mute control.
59	T.MUTE	O	Tuner mute control.
62	AFT-L	I	AFT low level judge input.
63	$\overline{\text{AFT-H}}$	I	AFT high level judge input.
64	$\overline{\text{AFT}}$	O	AFT control output.
68	BAND B	O	Tuner band select output.
69	BAND A	O	Tuner band select output.
70	$\overline{\text{HS}}$	O	Capstan motor high speed control.
71	$\overline{\text{F}}$/R	O	Capstan motor direction control.
73	CM STOP	O	Capstan motor stop control.
75	TU POWER	O	Tuner power supply control.
76	$\overline{\text{SEN POW}}$	O	End & start sensor's power supply control.
77	AL	O	AL power supply line control output.
78	$\overline{\text{CTL RET}}$	I	CTL clamp reset.
79	SYS SO	O	Serial data out to OPE MI-COM.
80	SYS SI	I	Serial data in from OPE MI-COM.
81	SYS CLK	I	Serial clock input.
82	SYS RDY	O	Data transfer ready input.
83	SHORT	I	Power supply abnormal condition detect input.
85	AMP VCC	–	+5 V power supply for analog AMP.
86	AMP VREF	–	Voltage reference for analog AMP.

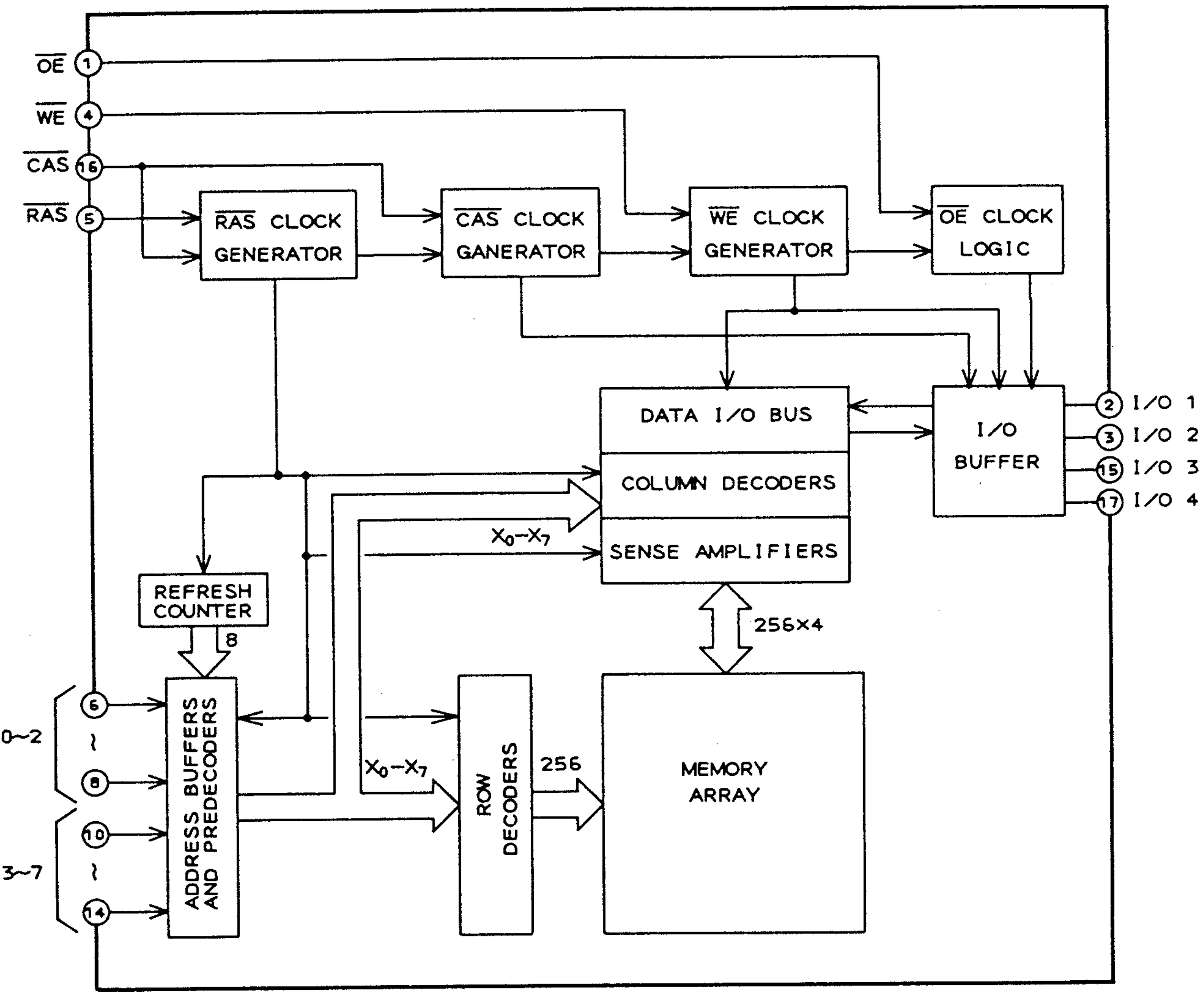
M37770M4H (SERVO/SYSCON MI-COM)

PIN NO	PORT NAME	I/O	FUNCTION
87	CLAMPR	I	CTL clamp AMP negative input.
88	CLAMPF	I	CTL clamp AMP positive input.
89	AMPC	–	Load capacitor connecting pin for CTL AMP.
90	CTLAMP OUT	O	CTL AMP output.
91	CTLAMP IN	I	CTL AMP input.
92	CTL+SWOUT	O	CTL internal sw control.
93	CTL+	I	CTL positive side input.
94	CTL–	I	CTL negative side input.
95	C	–	Capacitor connecting pin for REC CTL signal's trapezoid wave.
96	CP FG	I	Capstan motor FG signal input.
97	DM FG	I	Drum motor FG signal input.
98	DM PG	I	Drum motor PG signal input.
99	AMP VSS	–	Ground for analog system (FG, PG & CTL AMP).
100	A.VCC	–	+5 V power supply (for analogue system circuit).
102	VREF	–	Servo voltage reference.
104	FINE VT	O	FINE TUNING control voltage.
106	PICT	O	Picture control output.
107	ANC.VOL	O	ANC control output.
109	LNC	O	Line noise canceller control (L/M/H).
110	B/W SEC	O	Black & white/SECAM swithing.
111	E/P/T	O	EE/PB/TRICK select control (L/M/H).
112	ES	I	End sensor input.
113	MODE S	O	Canal plus signal control.
115	SDP	I	SECAM (MESECAM) detect signal input.
116	SS	I	Start sensor input.
117	CT DET	I	Crosstalk detection voltage input.
118	TUNE	O	ANC control (L.M.H).
119	ENV.DET	I	Video envelope input.
120	V.SYNC IN	I	V.SYNC input.
121	HEAD CTL	O	Video head SW control.
122	$\overline{\text{NP}}$	O	Colour system convert request from NTSC to PAL.
123	C.FG MON	–	Not used.
124	D.FG MON	–	Not used.
125	CTL MON	–	Not used.
126	TUNER PWM	O	Tuning voltage output for tuner.
127	CM PWM	O	Capstan motor's speed & phase error output.
128	DM PWM	O	Drum motor's speed & phase error output.

SAA5233 (VPS DATA DECODER)

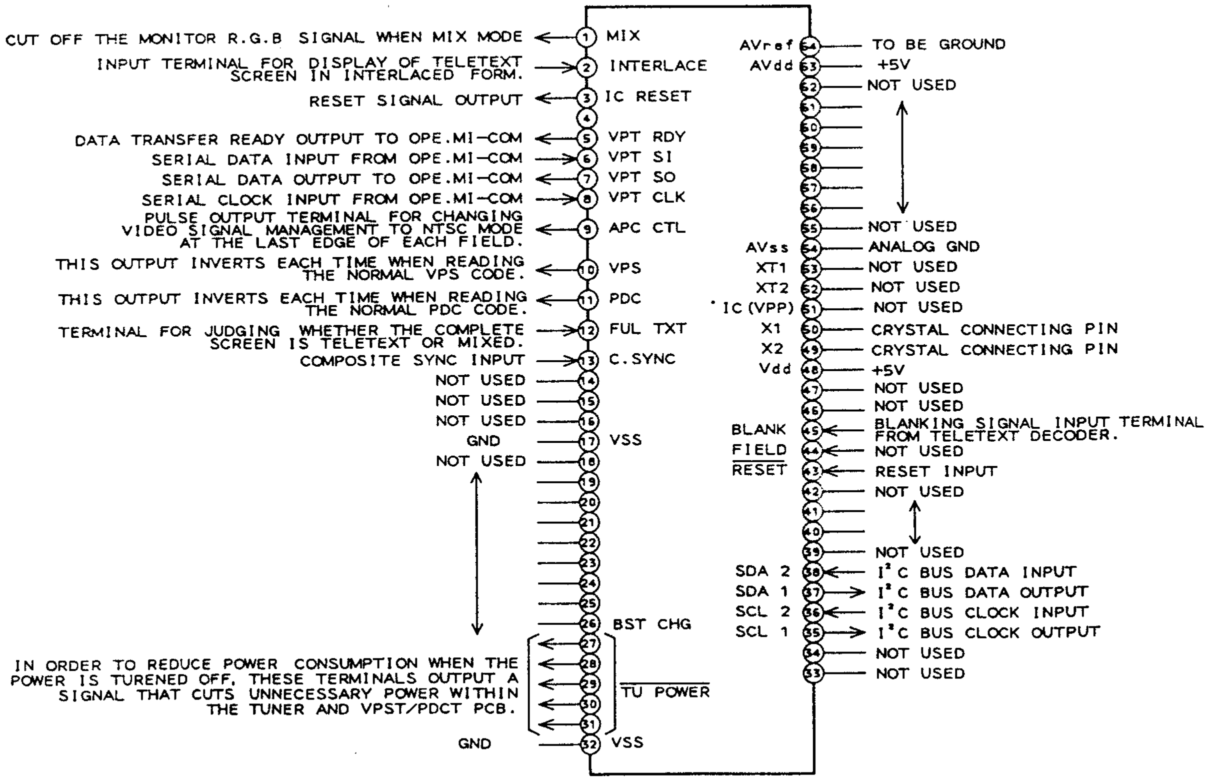
PIN No.	PORT NAME	I/O	FUNCTION
1	MOD IN	I	REC FM modulator input pin.
2	BLACK	–	Video black level storage pin connected to ground via a 0.1 μF capacitor.
3	IREF	I	Reference current input pin.
4	VDD	–	+5 V power supply.
5	Vss	–	Ground.
6	OSCOUT	O	27 MHz crystal oscillator output.
7	OSCIN	I	27 MHz crystal oscillator input.
8	OSCGND	–	27 MHz crystal oscillator ground.
9	TEST S	–	Ground in normal operation.
10	TEST A	–	Ground in normal operation.
11	TP1	–	Ground in normal operation.
12	SCL	I	Serial clock input for I^2 C control bus.
13	SDA	I/O	Serial data port for I^2 C control bus.
14	AO	–	Least significant bit of I^2 C address.
15	INT	O	Open drain interrupt output. (Active low)
16	TP2	–	Ground in normal operation.

V53C464AP (64 k x 4 BIT D-RAM)



OE 1
WE 4
CAS 16
RAS 5
RAS CLOCK GENERATOR
CAS CLOCK GANERATOR
WE CLOCK GENERATOR
OE CLOCK LOGIC
DATA I/O BUS
COLUMN DECODERS
SENSE AMPLIFIERS
I/O BUFFER
2 I/O 1
3 I/O 2
15 I/O 3
17 I/O 4
X_0–X_7
256×4
REFRESH COUNTER
8
A0~2
6
8
A3~7
10
14
ADDRESS BUFFERS AND PREDECODERS
X_0–X_7
ROW DECODERS
256
MEMORY ARRAY

µPD78014CW (VPT/PDC MI-COM)



CUT OFF THE MONITOR R.G.B SIGNAL WHEN MIX MODE ← 1 MIX
INPUT TERMINAL FOR DISPLAY OF TELETEXT SCREEN IN INTERLACED FORM. → 2 INTERLACE
RESET SIGNAL OUTPUT ← 3 IC RESET
4
DATA TRANSFER READY OUTPUT TO OPE.MI-COM ← 5 VPT RDY
SERIAL DATA INPUT FROM OPE.MI-COM → 6 VPT SI
SERIAL DATA OUTPUT TO OPE.MI-COM ← 7 VPT SO
SERIAL CLOCK INPUT FROM OPE.MI-COM → 8 VPT CLK
PULSE OUTPUT TERMINAL FOR CHANGING VIDEO SIGNAL MANAGEMENT TO NTSC MODE AT THE LAST EDGE OF EACH FIELD. ← 9 APC CTL
THIS OUTPUT INVERTS EACH TIME WHEN READING THE NORMAL VPS CODE. ← 10 VPS
THIS OUTPUT INVERTS EACH TIME WHEN READING THE NORMAL PDC CODE. ← 11 PDC
TERMINAL FOR JUDGING WHETHER THE COMPLETE SCREEN IS TELETEXT OR MIXED. → 12 FUL TXT
COMPOSITE SYNC INPUT → 13 C.SYNC
NOT USED 14
NOT USED 15
NOT USED 16
GND 17 VSS
NOT USED 18
19
20
21
22
23
24
25
26 BST CHG
IN ORDER TO REDUCE POWER CONSUMPTION WHEN THE POWER IS TURENED OFF, THESE TERMINALS OUTPUT A SIGNAL THAT CUTS UNNECESSARY POWER WITHIN THE TUNER AND VPST/PDCT PCB. ← 27 28 29 30 31 TU POWER
GND 32 VSS
AVref 64 TO BE GROUND
AVdd 63 +5V
62 NOT USED
61
60
59
58
57
56
55 NOT USED
AVss 54 ANALOG GND
XT1 53 NOT USED
XT2 52 NOT USED
IC (VPP) 51 NOT USED
X1 50 CRYSTAL CONNECTING PIN
X2 49 CRYSTAL CONNECTING PIN
Vdd 48 +5V
47 NOT USED
46 NOT USED
BLANK 45 ← BLANKING SIGNAL INPUT TERMINAL FROM TELETEXT DECODER.
FIELD 44 ← NOT USED
RESET 43 ← RESET INPUT
42 NOT USED
41
40
39 NOT USED
SDA 2 38 ← I²C BUS DATA INPUT
SDA 1 37 → I²C BUS DATA OUTPUT
SCL 2 36 ← I²C BUS CLOCK INPUT
SCL 1 35 → I²C BUS CLOCK OUTPUT
34 NOT USED
33 NOT USED